THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—31ST YEAR. SYDNEY, SATURDAY, FEBRUARY 5, 1944. No. 6.

Table of Contents.

[The Whole of the Literary Matter in THE MEDICAL JOURNAL OF AUSTRALIA is Copyright.]

ORIGINAL ARTICLES— Page.
Laboratory Investigation of Renal Function, by Vera I. Krieger, D.Sc. .. 101
The Incidence of Tetryl Dermatitis or "C.E." Rash: A Review of Investigations Carried out in Australian Fuse-Filling Factories, by H. M. L. Murray, L.R.C.P., L.R.C.S., D.P.H., R. W. Prunster, B.Sc. (Agr.), and R. D. Anderson, B.Agr.Sc. .. 104
A Record of Commoner Skin Diseases at a Royal Australian Air Force Hospital, by B. N. O. Colahan .. 107

REPORTS OF CASES—
Malignant Neoplasm of the Kidney: An Unusual Case in Childhood, by Hamilton Patterson .. 109

REVIEWS—
Ear, Nose and Throat Diseases .. 110
The Nervous Soldier .. 110
Clinical Symptoms and Signs .. 110

LEADING ARTICLES—
Tolerance and Criticism .. 111

CURRENT COMMENT—
The Abatement of Noise .. 112
Absenteeism Among Women .. 113
Contact Dermatitis from Hair Lacquer .. 113

ABSTRACTS FROM MEDICAL LITERATURE— Page.
Therapeutics .. 114
Neurology and Psychiatry .. 115

BRITISH MEDICAL ASSOCIATION NEWS—
Medico-Political .. 116
Scientific .. 116

CORRESPONDENCE—
A Circular Operating Frame .. 116
The Future of Australia .. 116
The Nervous Soldier .. 117
Intracapsular Cataract Extraction .. 117
The Practice of Radiotherapy and the Future of Cancer Treatment in Australia .. 117

OBITUARY—
Leslie Cowlishaw .. 118

NAVAL, MILITARY AND AIR FORCE—
Decorations .. 119

NOMINATIONS AND ELECTIONS .. 120

MEDICAL APPOINTMENTS .. 120

BOOKS RECEIVED .. 120

DIARY FOR THE MONTH .. 120

MEDICAL APPOINTMENTS: IMPORTANT NOTICE .. 120

EDITORIAL NOTICES .. 120

LABORATORY INVESTIGATION OF RENAL FUNCTION.

By VERA I. KRIEGER, D.Sc.,

From the Department of Pathology, Women's Hospital, Melbourne.

MUCH work over the last twenty-five years has resulted in the knowledge that certain tests are reliable for evaluating the functions of various organs. It is now desirable to select certain of these tests to give as complete a picture of the functions of each organ as is possible, and in the investigation of renal function the choice may be made from many well-tried tests. When there is the question of the presence of renal calculus or some other surgical condition affecting one or both kidneys, tests such as the rate of excretion of phenolsulphonephthalein, indigo-carmine and "Uroselectan" may be used. When the total function of the kidneys is being considered, many tests are available. In 1938 a comparative study[1] was made of the following tests: Maclean's urea concentration test, the urea concentration excretion test, the urea concentration factor, the Rabinovitch factor, the Van Slyke urea clearance and the Fowweather urea clearance. The conclusion was reached that the Fowweather urea clearance test and the urea concentration test were the most useful ones in this group for the purpose of estimating renal function in pregnancy, when the urea concentration test was extended to include the estimation of the total amount of urea excreted during the period of the test. It has become apparent that the total excretion of urea is more important in the assessment of renal function than the concentrating power suggested by Maclean. In a recent communication, Davis[2] also emphasizes the importance of the Fowweather clearance test, but holds that it gives more accurate information regarding kidney function than any other of the tests in common use, so that no other test is necessary for the estimation of renal efficiency. There is, however, evidence against the view that this test is always superior to all others.

In the previous paper[1] it was shown that in 67% of the patients in whom renal function was estimated by means of the urea concentration excretion and the Fowweather urea clearance tests, both tests indicated either normal function or inefficiency. A further series of 1,200 tests reveals the same order of agreement between these two methods of estimating renal efficiency.

The fact that disagreement occurred in 33% of these cases indicates the necessity for performing both tests on each patient, and if possible, for using other tests to reach the final verdict in some instances. As previously stated, agreement in the results of the selected tests gives a much more reliable basis for diagnosis. Analysis of tests reported in 1938 and of those in the recent series led to the following conclusions:

1. When the blood urea content is abnormally raised after ingestion of urea, and particularly if there is a high resting blood urea level, a low Fowweather clearance figure may occur in association with a normal result to the urea concentration excretion test. Harrison observed that when there is a high level of urea in the blood, the amount of urea excreted in the urine after a large dose of urea may be greater than such a patient's kidneys can normally eliminate. This abnormal elimination of urea will cause the urea concentration excretion test to fall within the normal range, whilst the Fowweather urea clearance and raised blood urea concentration indicate the existing state of renal inefficiency.

2. Great variations in the volume of urine and in the amount of urea excreted in each of the three hours following ingestion of urea have a profound effect on the Fowweather value. Such variations frequently result in "dip" or "peak" curves instead of the normal straight line effect noted when the total amount of urea excreted per hour is plotted against the time. A "dip" curve is often present when the Fowweather clearance figure is low, and may be associated with a normal result of the urea concentration excretion test. A "peak" curve is often observed when a high Fowweather clearance figure is associated with a low total excretion of urea in the three hours of the test. In such instances the results of the urea concentration excretion tests frequently agree with

the clinical evidence and are more reliable in indicating the renal function. In toxæmias of pregnancy, findings of the "peak" curve type resulting in high Fowweather clearance figures associated with low urea concentration excretion figures are found in two-thirds of the cases in which discrepancy between Fowweather clearance values and urea concentration excretion figures occurs. Such discrepancies occur most frequently in tests performed during the ante-partum and post-partum periods. Few such results were obtained from patients investigated two and twelve months after delivery. These observations correspond to the presence of toxæmia during and immediately after pregnancy and recovery within two months of delivery.

3. In about 5% of cases very large volumes of urine are excreted after ingestion of urea. In many of these the volume of urine and the amount of urea excreted per hour vary greatly. These factors are often associated with a normal total excretion of urea in three hours; but the clinical evidence suggests that these tests may not reveal the true condition of the kidneys. There was an incidence of only 55 such results in a total of over 1,200 tests, 23 occurring in the post-partum period and 22 among patients tested two months after delivery. These observations suggest that the large fluid intake of nursing mothers may have been responsible for this type of result. By repetition of the tests after restriction of fluid intake for twenty-four hours prior to the day of the test, satisfactory results were obtained.

In discussing the relationship of the Fowweather urea clearance to other tests, Davis holds that when divergence exists between clinical assessment, level of blood urea, and urea concentration on the one hand, and the urea clearance on the other, "it is wise to err on the side of the latter". He then quotes the following figures in support of this statement:

> Blood urea level: 39 milligrammes of urea per 100 cubic centimetres of blood.
> Blood urea level two hours after the ingestion of 15 grammes of urea: 64 milligrammes of urea per 100 cubic centimetres of blood.
> Results of urea concentration test: (i) 2·7% (40 cubic centimetres), (ii) 2·8% (26 cubic centimetres).
> Fowweather urea clearance: 53%.

Whilst his view is undoubtedly justified if the concentrating power alone is taken into account in the urea concentration test, further consideration of concentration in relation to volume of urine at once makes it evident that only 1·8 grammes of urea were excreted in two hours. Thus the urea concentration excretion test gives information at least equally useful to that obtained from the Fowweather clearance test in this instance. The comment given on the evidence available for this patient, that there is "no conception of the presence of renal inefficiency" and that the clearance test alone gave the true prognosis, should be modified.

In Table II of Davis's paper, in three of the four cases quoted the effect is shown of the excretion of large volumes of urine and of low urea concentrating power, resulting in the excretion of a normal amount of urea during the period of the test. In each instance the blood urea concentration was raised.

As the Fowweather clearance is calculated from the mathematical formulæ $C_S = \frac{U \times \sqrt{V}}{B} \times 1{\cdot}85$, and $C_M = \frac{U \times V}{B} \times 1{\cdot}33$, where B represents the number of milligrammes of urea per 100 cubic centimetres of blood, if the urea content of the blood is considerably increased, the large denominator necessarily results in a low Fowweather clearance value. This test therefore gives no further information than that already obtained from the high blood urea concentration.

The results of two sets of tests on one patient may be quoted from Davis's paper as confirmatory evidence of the agreement between the total excretion of urea and the Fowweather clearance value (Table I).

TABLE I.

Observation.	Test I.	Test II.
Blood urea level, per 100 cubic centimetres of blood	20 milligrammes.	38 milligrammes.
Blood urea level per 100 cubic centimetres of blood. Two hours after ingestion of urea	72 milligrammes.	58 milligrammes.
Urea concentration test results:		
First test	2·5% (86 cubic centimetres)	2·8% (52 cubic centimetres)
Second test	2·5% (80 cubic centimetres)	2·9% (48 cubic centimetres)
Total excretion of urea	4·0 grammes	2·9 grammes
Fowweather clearance test result	72%	57%

The author commented on these two sets of tests as follows. In the first tests, the urea concentration and blood urea level were good, and there were no means of assessing renal damage; the result of the Fowweather clearance test was fair—some renal damage was indicated. In the second lot of tests, the urea concentration and blood urea level were good; the urea concentrating power was better than previously; the Fowweather clearance test indicated poorer function than previously.

To my mind, the variation in concentrating power between the first and second series of tests is too small to be significant. However, when note is taken of the volumes of urine excreted, deterioration in the power to excrete urea is clearly seen and the variation between the results of the first and second urea concentration excretion tests is similar to that observed in the Fowweather values.

My experience does not bear out the following statement made by Davis: "Since when the urea clearance value was good, not one patient in this series (all groups) showed abnormalities in other tests, it may be concluded that a normal blood urea level and urea concentration may mean either a good or bad state of renal function and only the clearance test will decide which is present. A good urea clearance result on the other hand always means satisfactory renal activity, a bad result, poor kidney function." As has already been stated, 33% disagreement occurred between Fowweather clearance values and the results of urea concentration excretion tests in a series of more than 1,200 tests. In the overwhelming majority of these "disagreeing" tests, the Fowweather clearance was normal, the total excretion was low, and the clinical evidence favoured renal inefficiency. In many instances improvement in clinical condition resulted in the total excretion as well as the Fowweather clearance figure becoming normal. It must be again emphasized that irregularity in the amount of urea excreted per hour results in Fowweather values which may be higher or lower than the values obtained when tests are repeated on the next day, when regular excretion of urea per hour occurs.

In several instances Davis stresses the prognostic significance of a low Fowweather clearance figure, and in "comment and follow up" one reads that the patient had died. Whilst I agree that the low Fowweather clearance figure and other evidence undoubtedly indicated severe kidney damage, the question might well be asked whether the fact that many of these patients were elderly men and thus "poor operative risks" might not be, in part, responsible for the fatal outcome. In our series of cases, on the other hand, the patients were mostly young women, and while the low Fowweather clearance figure indicated unsatisfactory kidney efficiency at the time of test, the end-results in nearly all cases were quite good, since after the termination of the pregnancy further tests revealed recovery of normal function within two months. Thus a low Fowweather clearance figure does not necessarily signify a poor prognosis.

Procedure at the Women's Hospital, Melbourne.

From the evidence in this and earlier papers, and from a study of the data presented by Davis, it is evident that no single test is an infallible means of judging kidney function, and that a composite picture obtained by correlating several well tried tests is more reliable. Such a

system has been in operation for several years at the Women's Hospital, Melbourne, and has been found to work smoothly as part of the hospital routine.

The tests performed on each patient are as follows: (i) blood urea concentration test (fasting patient); (ii) blood urea concentration test two hours after ingestion of 15 grammes of urea in 100 cubic centimetres of water; (iii) Maclean's urea concentration test; (iv) urea concentration excretion test; (v) Fowweather urea clearance.

The hospital routine is as follows: (i) The patient has a midday meal including vegetables, meat or fish (unless she is taking a protein-free diet), and sweets, on the day preceding the test. (ii) She has her evening meal at 4 p.m., consisting of bread with butter or jam and sometimes an egg. (iii) She has tea or cocoa at 8 p.m. (iv) She has tea at 10 p.m., if desired. No further fluid or food is taken until the blood for the blood urea concentration test is taken at 6 a.m. next day. (v) At 6 a.m., blood is taken for estimation of the blood urea level, the bladder is completely emptied and 15 grammes of urea in 100 cubic centimetres of water are given. (vi) One hour later (7 a.m.) urine is collected, and the whole volume passed is sent to the laboratory for analysis. (vii) At 8 a.m., a second sample of urine is collected and a second sample of blood is drawn. (viii) At 9 a.m., a third specimen of urine is collected.

The urea concentration and the urea concentration excretion tests are made on the three urine samples; the Fowweather clearance is calculated on the concentration of urea and on the volume of urine collected at the end of the second hour, and on the blood urea level estimated from the specimen of blood collected at the end of the second hour.

Values for Normal Renal Function in the Various Tests.

All values up to 40 milligrammes of urea per 100 cubic centimetres of blood indicate normal renal function. In pregnancy, however, values of 30 to 40 milligrammes are regarded as suggestive of mild renal inefficiency, whilst values of 40 milligrammes and over are taken as evidence of severe renal damage. The average ratio of the amount of blood urea two hours after ingestion of 15 grammes of urea to the fasting blood urea value in a series of 100 patients giving normal results to tests was 2·3, with a range of 1·3 to 4·0.

Concentrating power is regarded as being fairly good if the concentration of urea is at least 2% in one of the three specimens (Maclean's standards). The volume of urine excreted is regarded as normal up to 300 cubic centimetres for the three hours. The total excretion of urea has been shown to average 6·4 grammes per three hours in the normal woman and 5·3 grammes per three hours for the pregnant woman near term.[3]

In the Fowweather urea clearance test, Fowweather regards the lower limit of normal as 70% of the average normal function.

Calculation of the Fowweather Urea Clearance Value.

The calculation of the Fowweather urea clearance value, involving in most tests determination of the square root of the volume of urine per minute, seems to prejudice many people against its use. Two nomographic charts have been evolved to overcome the necessity for exercising mathematical talent. Pennington's chart,[4] while undoubtedly being relatively simple to follow on a large-scale drawing, becomes hopelessly confusing when reduced to the size of the page of a text-book. That described by Davis, although consisting of only five straight lines, also suffers when reduced for publication. The fact that there are on each line two or three different scales with varying intervals makes its use too complicated. It could certainly not be placed with confidence in the hands of technicians. In this laboratory the calculations have been simplified in the following ways: (i) $C_S = \frac{U \times \sqrt{V} \times 1{\cdot}85}{B}$, for tests in which the volume of urine excreted is less than two cubic centimetres per minutes, and (ii) $C_M = \frac{U \times V \times 1{\cdot}33}{B}$ for those in which the volume of urine excreted exceeds two cubic centimetres per minute. (C_S = standard clearance, C_M = maximum clearance, U = number of milligrammes of urea per 100 cubic centimetres of urine, V = the volume of urine excreted per minute, and B = number of milligrammes of urea per 100 cubic centimetres of blood.) In these formulæ, $\sqrt{V} \times 1{\cdot}85$ and $V \times 1{\cdot}33$ can be calculated for volumes up to (*a*) 120 cubic centimetres per minute and (*b*) above 120 cubic centimetres per minute. If these values are tabulated against the volume excreted per hour, a useful table is produced. Such a table has been gradually constructed in this laboratory and is reproduced in Table II. The following example illustrates the simplification of the original calculation. If the blood urea level at the end of the second hour was 60 milligrammes, the urea concentration 0·70% and the volume of urine excreted 85 cubic centimetres in the second hour, the formula $C_S = \frac{U \times \sqrt{V} \times 1{\cdot}85}{B}$ would read $\frac{700 \times \sqrt{\frac{85}{60}} \times 1{\cdot}85}{60}$. From Table II the value of the square root multiplied by 1·85 can be read directly as 2·2. The calculation therefore becomes $\frac{700 \times 2{\cdot}2}{60}$; that is, 26% of the average normal function.

Assessment of Renal Efficiency.

The determination of renal function by the use of such a series of tests can best be illustrated by a set of examples. In Table III the results of tests on five patients are set out in detail, and the interpretation of each test and the final summing up are included in Table III. The selected examples illustrate that all tests agree in revealing perfect renal function in the first patient and severe renal inefficiency in the second patient. All tests for the third patient point to renal inefficiency, with the exception of the fasting blood urea value. Such a series indicates less severe damage than as if the blood urea level had also been raised. In tests on the fourth patient the urea concentration and urea concentration excretion tests indicate renal inefficiency, whilst the Fowweather clearance value

TABLE II.
Fowweather Table.

Volume of Urine in Cubic Centimetres per Hour.	$\frac{\sqrt{V}}{60} \times 1{\cdot}85$										$\frac{V}{60} \times 1{\cdot}33$									
10	0·76	*24*	1·17	*38*	1·48	*52*	1·72	*66*	1·94	*80*	2·14	*94*	2·30	*108*	2·48	*122*	2·70	*136*	3·01
11	0·78	*25*	1·18	*39*	1·50	*53*	1·74	*67*	1·95	*81*	2·14	*95*	2·33	*109*	2·48	*123*	2·73	*137*	3·04
12	0·80	*26*	1·20	*40*	1·52	*54*	1·74	*68*	1·96	*82*	2·16	*96*	2·34	*110*	2·50	*124*	2·75	*138*	3·06
13	0·85	*27*	1·22	*41*	1·53	*55*	1·77	*69*	1·98	*83*	2·18	*97*	2·35	*111*	2·52	*125*	2·77	*139*	3·08
14	0·89	*28*	1·26	*42*	1·55	*56*	1·78	*70*	2·00	*84*	2·18	*98*	2·37	*112*	2·53	*126*	2·79	*140*	3·10
15	0·93	*29*	1·28	*43*	1·57	*57*	1·79	*71*	2·02	*85*	2·20	*99*	2·37	*113*	2·53	*127*	2·81	*141*	3·13
16	0·96	*30*	1·31	*44*	1·57	*58*	1·81	*72*	2·04	*86*	2·20	*100*	2·39	*114*	2·55	*128*	2·83	*142*	3·15
17	0·98	*31*	1·33	*45*	1·59	*59*	1·83	*73*	2·04	*87*	2·22	*101*	2·39	*115*	2·55	*129*	2·86	*143*	3·17
18	1·01	*32*	1·35	*46*	1·60	*60*	1·85	*74*	2·05	*88*	2·24	*102*	2·40	*116*	2·57	*130*	2·88	*144*	3·19
19	1·05	*33*	1·38	*47*	1·63	*61*	1·85	*75*	2·07	*89*	2·24	*103*	2·40	*117*	2·59	*131*	2·90	*145*	3·21
20	1·07	*34*	1·39	*48*	1·67	*62*	1·87	*76*	2·07	*90*	2·26	*104*	2·42	*118*	2·59	*132*	2·93	*146*	3·24
21	1·09	*35*	1·41	*49*	1·67	*63*	1·88	*77*	2·09	*91*	2·28	*105*	2·44	*119*	2·61	*133*	2·95	*147*	3·26
22	1·11	*36*	1·44	*50*	1·68	*64*	1·91	*78*	2·10	*92*	2·28	*106*	2·46	*120*	2·66	*134*	2·97	*148*	3·28
23	1·14	*37*	1·46	*51*	1·70	*65*	1·92	*79*	2·13	*93*	2·29	*107*	2·46	*121*	2·68	*135*	2·99	*149*	3·30

TABLE III.

Assessment of Renal Efficiency by a Study of a Series of Tests on Five Patients.

Patient.	Blood Urea Content.		Urea Concentration and Urea Excretion Tests.				Fowweather Urea Clearance. Percentage.	Comments.						
								Blood Urea Content.						
	Fasting.	Two Hours after Urea.	Number.	Percentage Urea.	Volume of Urine. (C.Cm.)	Total Urea Excretion. (Grms.)		Fasting.	Two Hours after Urea.	Urea Concentration.	Urine Volume.	Total Excretion.	Fowweather Clearance.	Assessment of Renal Function.
I	18	34	(1)	1·8	135									
			(2)	3·0	85	6·8	192	Normal.	Normal.	Excellent.	Normal.	Normal.	Normal.	Excellent.[2]
			(3)	3·1	58									
II	66	103	(1)	1·0	85									
			(2)	0·9	95	2·5	19	High.	High.	Poor.	Normal.	Low.	Low.	Marked inefficiency.[3]
			(3)	1·3	75									
III	20	60	(1)	0·2	147									
			(2)	0·7	85	1·4	27	Normal.	Normal.	Very poor.	Normal.[1]	Low.	Low.	Inefficiency.[5]
			(3)	0·7	79									
IV	20	36	(1)	1·0	55									
			(2)	1·3	134	3·5	109	Normal.	Normal.	Poor.	Normal.[1]	Low.	Normal.	Renal inefficiency.[4]
			(3)	1·5	80									
VA	27	53	(1)	1·6	123									
			(2)	1·8	98	5·8	80	Normal.	Normal.	Only fair.	Greater than normal.	Normal.	Normal.	Difficult to assess.[7]
			(3)	1·9	105									
VB	31	58	(1)	1·9	30									
			(2)	2·0	66	3·1	66	Normal.	Normal.	Excellent.	Normal	Low.	Low.	Renal inefficiency.[8]
			(3)	2·7	42									

[1] Ratio to fasting blood urea above normal average. [2] Normal (upper limit). [3] Excellent—all tests in agreement. [4] Marked inefficiency—all tests in agreement. [5] Inefficiency—all tests except fasting blood urea in agreement. [6] Renal inefficiency. Concentrating power only fair, and in spite of fairly large volumes of urine total excretion of urea low. In agreement with clinical evidence. Fowweather value may be high because of the uneven excretion of urea per hour resulting in a "peak" curve [7] Difficult to assess. Total excretion normal but the volumes of urine very large. Therefore test repeated two days later. [8] Repeated tests two days later indicated renal inefficiency by both total excretion and Fowweather tests.

is normal. This discrepancy is explained by the uneven excretion of urea per hour. In such instances the Fowweather clearance value is not a true guide to kidney function. Two sets of tests on the fifth patient indicate the difficulty introduced when large volumes of urine are passed during the test, and the more satisfactory results when tests are repeated after restriction of fluid intake for twenty-four hours.

Summary and Conclusions.

The object of this paper has been to draw attention to the following points:

1. No single test is completely satisfactory for the determination of renal function in all types of patients.

2. The Fowweather urea clearance test is likely to give unreliable results when the excretion of urea is irregular during the three hours of the urea concentration test. Normal function may be indicated when inefficiency is present and dysfunction when the kidneys are normal.

3. The urea concentration excretion test may give normal results in spite of kidney damage when there is a high concentration of urea in the blood, and also when an excessive amount of urine is excreted during the period of the test.

4. A significantly low Fowweather urea clearance value indicates poor renal function at the time of the test, but does not necessarily mean that the kidney is permanently damaged. In pregnant women very low values for the Fowweather tests have been obtained during the height of toxæmia, but these values had returned to normal two months after termination of the pregnancy.

From the evidence presented, the necessity for a thorough investigation of renal efficiency by the use of several tests and for the correlation of all the available data is clearly illustrated.

References.

(1) V. I. Krieger: "A Critical Survey of Renal Function Tests in their Application to the Determination of Renal Efficiency in Toxæmias of Pregnancy", THE MEDICAL JOURNAL OF AUSTRALIA, September 17, 1938, page 457.

(2) M. C. Davis: "The Investigation of Renal Function with a New Nomographic Method for the Determination of Urea Clearance", THE MEDICAL JOURNAL OF AUSTRALIA, March 27, 1943, page 267.

(3) V. I. Krieger and N. Norris: "Renal Function Tests in Normal and Toxæmic Pregnancy", *The Journal of Obstetrics and Gynæcology of the British Empire*, Volume XLVIII, Number 6, page 726.

(4) I. Maxwell: "Clinical Biochemistry", 1938, page 52.

THE INCIDENCE OF TETRYL DERMATITIS OR "C.E." RASH: A REVIEW OF INVESTIGATIONS CARRIED OUT IN AUSTRALIAN FUSE-FILLING FACTORIES.

By H. M. L. MURRAY, L.R.C.P., L.R.C.S., D.P.H., R. W. PRUNSTER, B.Sc. (Agr.),

AND

R. D. ANDERSON, B.Agr.Sc.,

From the Industrial Welfare Division, Commonwealth Department of Labour and National Service, Melbourne.

TETRYL (TRI-NITRO-PHENYL-METHYL-NITRAMINE) is a powerful explosive, slightly more sensitive than trinitrotoluene, though not dangerously so. In army nomenclature it is known as "composition exploding" or "C.E." It is most often used as an intermediate detonating agent between the fuse and the main explosive charge.

Pure tetryl is a crystalline powder with a faint yellow colour. The tetryl used in British filling factories before and during the early part of the war of 1914-1918 was in powder form, but later a granular form was manufactured, and this is now in common use. Tetryl is, for all practical purposes, insoluble in water, but is more soluble in alkaline solutions and in many fatty substances, including the natural secretion from the sebaceous glands of the skin.

Tetryl dermatitis presents no unusual clinical manifestations, and as it is associated with a branch of the explosives industry, its incidence is of importance only during wartime. It is therefore only during wartime that any opportunity presents itself for coordinated investigation; there is a scarcity of literature dealing with the incidence of the dermatitis, both from the seasonal aspect and from the point of view of discovering the processes at which it is usually contracted.

Tetryl as a Cause of Dermatitis.

It is not proposed to review the literature on this subject, though a bibliography is presented. A broad view of the trend of the literature may be useful in showing the interpretation placed on the data to be presented later. Ruxton states that at any time 30% of the operatives in the 1914-1918 fuse-filling factories were liable to "C.E." rash. One of us (H.M.L.M.), within his own wartime experience, has found that cases of rash among new employees may comprise 34% of the total factory strength at some times, and in October, 1942, at one Australian fuse-filling factory, 20% of the operatives were certificated as temporarily unfit for contact with tetryl.

Three general theories have been put forward concerning the nature of the reaction of tetryl on the skin. The first two arise from British experience in the first world war, and the third from observations made during the present war mainly in Canada and in the United States of America. At first it was considered that the mechanical irritation from the sharp-pointed crystals was a major factor causing the rash. A second theory of a possible chemical reaction with the skin (analogous to the reaction of nitroso bodies as germicides) was also presented. It was suggested that tetryl was dissolved in the natural grease of the skin and thus transferred to the cells of the sebaceous glands and hair follicles, where it reacted with the nucleic acid. No facts have been presented to support this theory, and since it does not conform to the known facts of the occurrence of rash, it seems inadequate.

Recently the theory has been advanced that tetryl dermatitis is the manifestation of an allergic response to the irritant. This is confirmed by a considerable body of data. Schwartz, in a private communication, states that "a most important contribution to the war effort is the discovery and proof of the fact that 'hardening' or immunity is developed by 90% of all new workers who become affected with dermatitis from the explosive, provided they are treated while working".

Australian Investigations.

The following investigation arose out of a request from the employees' union that a "health rate" should be paid to all operatives employed in any building in which tetryl was used. The inquiry was undertaken to determine the relative risk of dermatitis at each process; it was considered advisable to obtain at the same time data of the seasonal incidence of the rash, the relationship between the incidence of the rash and the duration of employment, and the incidence of symptoms other than rash among the employees.

Originally the data were collected by a *questionnaire* submitted to 1,370 employees of one large fuse-filling factory, precautions being taken to avoid any possibility of collusion among the employees, and also to keep the nature of the questions secret until the time of their submission. The employees were assured that the individual information provided would be regarded as confidential and would not be made available to the factory management. Supposed cases of dermatitis were checked against factory medical records, and those which were not confirmed by the factory medical officer were put through rigid statistical tests. These cases complied so closely with the distribution of the confirmed ones that there was no valid reason for excluding them from the data. The reason for the lack of confirmation in these cases was simply that the men had not presented themselves to the medical officer for attention. These data have been confirmed by records from a similar factory in a different climatic region.

Estimation of Relative Risks of "C.E." Rash for Specific Operations.—The data showed conclusively that the risk of contracting the rash was associated with tasks which required the operatives to handle the explosive itself. Within this group of tasks, there was a considerable variation in the relative risks associated with different jobs, the difference in risk varying with the intensity of the operative's contact. There is a low though definite risk for change-room attendants, who are required to sort tetryl-soiled clothing. One process known as "breakdown fuse" presented some risk, though these operatives are not required to handle the explosive. This is the first of the series of operations which comprise the whole process of fuse filling. It is performed before any tetryl is added to the fuse, but the fuse-carrying trays coming from the end of the production line are soiled with tetryl, and the operatives have a considerable chance of contact when handling the trays. Among the processes performed after the addition of tetryl are "final body assembly", "spraying" and "close down"; these present an estimated risk, though here again the operatives do not handle the explosive itself. However, the number of cases of dermatitis in these sections is so small that the risk cannot be considered statistically reliable. In all, eight tasks (including "breakdown fuse" and "change-room attendants"), in which the operatives have some direct contact with the explosive, present a definite though varying hazard of dermatitis; the other three tasks at which the operatives may have some slight accidental or incidental contact with tetryl are associated with a risk, but the risks are statistically unreliable. The remaining 24 processes carried on within the buildings are associated with no risk of dermatitis, irrespective of whether they are performed in the same bay or in the same building as the "high risk" processes.

Incidence of Dermatitis and Duration of Employment.—When all cases in these fuse-filling factories are considered, the data show that a rash rarely occurs in less than eight days after employment commences. Thereafter, the risk of contracting a rash increases rapidly, the "peak" occurring between the fourteenth and twenty-fourth days of employment. The risk then subsides to a low level within two or three months, and a slight but continuous further decrease continues until the risk reaches a stationary level after twelve months. The curve of the rash risk for males and females is similar, except that the "peak" risk for females is greater than that for males. It is a part of factory practice that the operative's roster includes the so-called "contact jobs" and "no contact jobs". The knowledge of this practice and the shape of the rash-risk curve supports the theory of an allergic reaction to the chemical, with an early period during which skin sensitivity is developed and manifested as a rash in varying degree between the fourteenth and twenty-fourth days; the subsequent rapid decrease in the risk of contracting a rash supports the thesis of an acquired resistance with further contact. The general shape of the risk curve might also be explained on the basis of the operative's personal hygiene, more care being taken after a rash has been experienced. Commodious change rooms with shower cubicles, washing facilities and ample supplies of hot and cold water are provided at the factory, and make the latter explanation unattractive. If the theory of an allergic reaction is accepted, there are two significant points for practical consideration: firstly, that new operatives should be rostered for tasks at which contact with tetryl is not overwhelming; secondly, that if the severity of the rash can thus be controlled, then the affected operative should continue to have a light exposure to tetryl in order to acquire the apparent partial resistance as rapidly as possible.

The Seasonal Incidence of Rash.—Direct tabulation of the census data showed that most rash cases occurred in the spring months. This is at variance with general medical opinion, and it is open to the criticism that the factory population varies throughout the year, large increases in staff occurring each spring. There was the possibility of further criticism, since the length of service of the operatives covered by the census varied considerably. These factors were excluded by the construction of artificial populations from the census data, such populations consisting of equal numbers entering in each of the twelve calendar months, and each monthly group of entrants being exposed for eighteen months. The effect of this treatment was to smooth the curve; but the highest seasonal incidence still occurred in spring, with the peak between August and October, and the lowest incidence in January-February. The same trend was shown for males

and for females, for the medically confirmed and for the supposed but unconfirmed cases. This seasonal incidence may be explained by a cycle of personal cleanliness associated with the temperature cycle. With the beginning of cold weather in June or July, operatives may tend to omit the daily shower, and so, by indirectly increasing the duration of contact with tetryl, become liable to increasing rash risks or to increased skin sensitivity in the late winter and early spring months. Alternatively, it might be suggested that a low rate of sweat excretion during the winter leads to solution and diffusion of tetryl, and a high sweat flow in summer flushes the pores and removes it. This latter explanation is not so readily acceptable, since the nature of the work and the controlled ventilation of the buildings would not be expected to produce a high sweat flow among the operatives. The obvious implication is that new operatives should, as far as possible, be engaged during the periods of low seasonal rash—that is, during January and February. It is probably coincidental that major staff increases to date have been made during the early spring—the period of high rash risk.

The Manner of Tetryl Contact.—It has been stated that the major risk of contracting dermatitis is associated with processes which require the actual handling of tetryl. Dust samples were collected at the face and neck positions of operatives on all contact jobs, and colorimetric determinations for the substance were made. The highest risk processes of "stemming" and "pelleting" produced air-borne tetryl concentrations of 21 and 20 milligrammes respectively per 1,000 cubic feet of air. Though these were the highest concentrations recorded at any process, this contact is still extremely small when compared with that of manipulating the explosive in the same processes. The exposure to air-borne tetryl was extremely slight in all other risk jobs, varying from 1·0 to 1·8 milligrammes per 1,000 cubic feet of air, and suggesting very strongly that the major risk is derived from the actual handling of the explosive. Minimum contact and improved personal hygiene, with the possible use of protective creams, suggest themselves as remedies.

Symptoms Associated with Tetryl Exposure.—The major manifestation of tetryl exposure is "'C.E.' rash". Typically this rash resembles fairly acute follicular dermatitis. Its distribution is characteristic, as it normally affects those portions of the face which are best supplied with sebaceous glands—the nose, the cheeks and adjoining areas. It commences with the appearance of minute red spots, said by some of the early observers to be the inflamed orifices of the sebaceous glands. The affected area becomes itchy in acute cases, and therefore is usually rubbed; the condition is thus made worse by mechanical irritation, and also because the fingers are usually heavily contaminated with tetryl dust. This stage is usually followed by some swelling, vesication and crusting. In severe cases considerable œdema is sometimes present, which may even close the eyes and alter the contour of the face. On the other hand, in very mild cases, only a small area of erythema is found, followed by light scaling.

In the experience of one of us (H.M.L.M.), who was medical officer at an explosives factory for more than four years, it is rare to find areas other than the face affected, although it is not entirely unknown. Subjects who have other areas affected usually display a much more severe reaction than those in whom the rash is confined to the face.

In addition, a number of symptoms, other than rash, are associated with exposure to tetryl. From the data, these symptoms could be grouped according to their frequency of occurrence among operatives who had had a rash, among those operatives who had been employed on contact jobs but had never contracted a rash, and among those who had never been employed on contact jobs. In this manner the association of symptoms in any one group is most probably due to the common cause—namely, intensity of contact with tetryl. On this basis œdema around the eyes is significantly associated with a contact with tetryl which usually causes face rash; nose-bleeding, vomiting and nausea, headache and dizziness are associated with contact, but are not necessarily intense enough to produce a rash; and skin discoloration, stomach ache and general chest symptoms are associated with any degree of prolonged contact.

Effects on Menstruation.—A number of authors have expressed the opinion that exposure to tetryl may affect menstruation. Special questions were asked to provide data on this point. Statistical analysis of the answers provided no evidence that exposure to tetryl alters the duration of menstrual flow or the interval between menses. There was no evidence that exposure to tetryl produces systemic changes.

Summary.

A review is given of the results of the statistical analysis of data dealing with the incidence of "C.E." rash in Australian fuse-filling factories.

The rash is associated almost entirely with those tasks which require actual handling of the explosive. Some care should be taken in ascribing to tetryl a rash appearing on employees engaged on other operations. In practice, measures should be taken to reduce the intensity of contact when operatives are employed on these tasks. Protective creams may be a useful adjunct to other measures.

For new employees, the major risk of rash occurs between the fourteenth and twenty-fourth days of employment, the risk decreasing rapidly to a relatively constant low level after this. This conforms to the theory of an allergic response to the chemical with an apparent partial immunity acquired with continued contact. In practice, new employees should be exposed to a low and gradually increasing contact with tetryl, so that the rash will not be severe and the subsequent resistance may be developed rapidly and with a minimum of discomfort.

The seasonal incidence is at a maximum between August and October and at a minimum in January and February; this suggests that new operatives should be employed at the latter time.

The amounts of air-borne tetryl in the vicinity of operatives on the risky jobs are extremely small. This suggests, further, that the major exposure is from the actual handling of tetryl.

Groups of symptoms associated with different intensities of contact with tetryl are enumerated.

It is hoped to publish the complete report of the investigation for limited circulation in the near future.

Bibliography.

E. A. Cooper and R. B. Haines: "Bactericidal Action of the Nitroso-compounds", *The Biochemical Journal*, Volume XXIII, 1929, page 10.

L. Cripps: "The Properties of Tetryl", *The British Journal of Dermatology and Syphilis*, Volume XXIX, 1917, page 3.

F. H. Goldman: "The Analysis of Atmospheric Samples of Explosive Chemicals", *The Journal of Industrial Hygiene and Toxicology*, Volume XXIV, Number 5, May, 1942, page 121.

Health of Munitions Workers Committee: Final Report, Industrial Health and Efficiency, London, 1918.

J. Hilton and C. N. Swanston: "Clinical Manifestations of Tetryl and Trinitrotoluene", *British Medical Journal*, October 11, 1941, page 509.

A. H. Jeffrey: Private communication.

W. L. Ruxton: "An Investigation into the Cause and Prevention of Industrial Diseases due to Tetryl", *The British Journal of Dermatology and Syphilis*, Volume XXIX, 1917, page 18.

L. Schwartz: Private communication, "Industrial Dermatitis in Our War Industries", address delivered before 31st National Safety Congress at Chicago, October 29, 1942.

A. L. Leigh Silver: "The Treatment and Prevention of Industrial Diseases in Filling Factories", *The Journal of the Royal Army Medical Corps*, Volume LXXI, Number 2, August, 1938, page 87.

Enid Smith: "The Prevention, Symptoms and Treatment of Tetryl Dermatitis", *British Medical Journal*, Volume I, April 29, 1916, page 618.

L. J. Whitkowski, C. N. Fischer and H. D. Murdock: "Industrial Illness due to Tetryl", *The Journal of the American Medical Association*, Volume CXIX, Number 17, August 22, 1942, page 1406.

R. Prosser White: "The Dermatergoses or Occupational Affections of the Skin", 1934.

A RECORD OF COMMONER SKIN DISEASES AT A ROYAL AUSTRALIAN AIR FORCE HOSPITAL.

By B. N. O. COLAHAN,
Flight Lieutenant, Medical Section, Royal Australian Air Force.

THE following review of patients with dermatological conditions seen at and admitted to a Royal Australian Air Force hospital during the year 1942 may be of interest, more particularly from a service viewpoint, as an indication of the problems most commonly encountered amongst airmen during that period, and of the methods of treatment which were found to be most satisfactory.

The total number of patients was above five hundred, and this record deals with the five skin diseases most frequently seen. These collectively accounted for a high percentage of all cases, and they are taken in order of their relative frequency. Scabies is omitted, as its recognition and effective treatment should be obvious.

The question of treatment being of major importance from a service viewpoint, discussion of ætiology and of details of cultural technique and bacteriological examinations have necessarily been curtailed. For this reason also the lines of treatment suggested have been made as simple as possible, and any methods or preparations which would obviously be impracticable or unobtainable under general service conditions have been purposely excluded.

Impetiginous Infections of the Face and Neck.

By far the greatest number of impetiginous infections of the face and neck were of streptococcal type, of moderate to severe virulence. Clinically, multiple discrete or confluent lesions were present, with serous exudate ("honey ooze") and yellow crusting of rapid development and spread. Very few cases were of the bullous staphylococcal type. Lesions involving the beard area, unless energetically and rationally treated, quickly tended to develop into active pustular folliculitis or sycosis.

The immediate predisposing factors to infection noted in a small number of cases were the following: (i) *herpes simplex*, with secondary infection; (ii) recent or chronic fissure, usually of the *alæ nasi* or commissures of lips; (iii) seborrhœic dermatitis of the face, with secondary impetiginization. However, in the great majority of cases there was no such evidence of a predisposing cause of infection, and the onset was usually characterized by rapid multiplication of lesions and dissemination throughout the beard area, more particularly when shaving had been persevered with, or when effective treatment had not been promptly instituted.

The necessity for early treatment of these infections was evident, and the subsequent time taken for treatment and recovery was directly proportional to the rapidity or delay with which effective treatment had been commenced.

All patients with impetiginous infections of the face were admitted to an isolation ward of the hospital and strictly segregated from other patients. Special care was taken regarding sterilization of washing bowls, utensils and towels *et cetera*.

A method of treatment which was found to be most effective was the following.

1. The use of "Lysol" washes (15 minims to a pint of water) every three hours.

2. Thorough inunction of the following ointment over the face and neck, including the entire beard area: *Unguentum Hydrargyri et Camphoræ Compositum* (2% each of *Hydrargyrum Ammoniatum* and camphor), with 10% of "M & B 125". It was found to be essential that all crusting and scabs should be thoroughly removed with "Lysol" washes or with a starch poultice if necessary before the ointment was smeared on the face.

3. The administration of sulphathiazole ("M & B 760"); two tablets three times a day were given for three or four days in a certain number of cases, a start being made as early as possible. The opinion was formed that sulphathiazole given orally was of benefit, more particularly in those cases in which the rapid spread of the affection was evidence of a virulent infection or of lowered resistance of the patient.

4. The forbidding of shaving during the acute stages, and in the presence of active pustular folliculitis; manual epilation of the affected hairs was recommended.

5. The application of gentian violet (1%) in *Lotio Calaminæ*, *Lotio Magnesii Carbonatis Composita*, or aqueous solution, applied freely after "Lysol" washes; this also gave good results. The disadvantage of staining by the dye, which is a serious consideration in general practice, was not considered so in a service hospital, as it probably contributed in a material manner to effective segregation of men with lesions of a highly contagious nature by means of their obvious identification. However, the treatment with inunction of *Unguentum Hydrargyri et Camphoræ Compositum*, with "M & B 125", was considered the more effective.

6. X-ray therapy. This was helpful, and if it was given early the incidence of sycosis was appreciably lessened. There will be many instances in which X-ray therapy will not be available. In these circumstances, particularly, the treatment suggested earlier will be found to be effective in the great majority of cases.

The question may be raised as to the advisability of, or discretion in, using such essential drugs of the sulphonamide group as "M & B 760" in treatment of infections of the face. It should be remembered that any member of the forces who has an acute streptococcal impetiginous infection of the face is potentially highly contagious, that he must be segregated until such infection has cleared up (a period which may vary from days to many weeks), and that the development of chronic sycosis may impair or terminate his usefulness in his particular branch of the service, especially if it is ineffectually treated. In view of these circumstances, the opinion held was that the use of sulphathiazole was justified, more especially in cases of pronounced virulence of infection or of obviously poor resistance of the affected airman, as evidenced by lack of response to other treatment. Its use should be confined to these cases.

Axillary Hyperhidrosis and Intertrigo ("Sweat Eczema").

Whilst the majority of men suffering from "sweat eczema" were examined or admitted to the hospital wards during the summer months or were returned from northern areas, there were instances of recurrence and exacerbation during the mid-winter period. Clinically, vesicular intertrigo of the axillary folds was present, frequently associated with a papulo erythematous rash of the trunk and upper limbs. In less acute cases, or in those in which vesication had subsided, varying degrees of lichenification of the anterior and posterior axillary folds were observed. Patch tests of "drabs" and "blues" shirting were carried out on a series of men, and the results of such tests were uniformly negative. There was usually clinical evidence of free sweating, and it was noted also that those affected were often of a nervous and highly strung temperament ("vasomotor neuroses"). The opinion formed was that the condition was basically due to hyperhidrosis and essential skin instability. Friction of clothing and neurogenic influences were regarded as aggravating factors. I am of the opinion that hyperthyreoidism is an underlying factor in many cases, and I consider that investigation along these lines might be helpful in controlling an intractable and incapacitating affection.

Treatment in the acute stages with active vesication consisted of the following measures:

1. Rest in bed. It was noted that even to allow men with lesions in the acute vesicular stage to dress and walk about sometimes caused an exacerbation of their affection.

2. The constant application of thick gauze packs soaked in aluminium acetate (1% aqueous solution) and kept moist; this procedure usually caused a pronounced improvement within twenty-four to forty-eight hours.

3. The use, when active vesication was subsiding, of *Lotio Calaminæ Oleosa* with gentian violet (0·5%) and *Liquor Burowii* (one drachm to one ounce); this was found most effective.

4. The application, when the acute stages had passed, of *Cremor Zinci* with crude coal tar (1%); this appeared to maintain improvement.

5. The administration as a routine measure in all cases of 0·5 grain of phenobarbital three times a day, or of *Haustus Glycerophosphatis Compositus* with sodium phenobarbital 0·5 grain three times a day. X-ray therapy was useful in obstinate cases.

It was found that in an appreciable number of cases recurrence took place, and the question of medical "boarding" had sometimes to be seriously entertained. Patients were advised also to wear silk or cotton singlets in preference to heavy woollen garments, to eliminate as far as possible the element of friction.

It may be wise to give a word of warning at this juncture—that is, the danger of applying a drying watery lotion (for example, *Lotio Calaminæ*) at any time on an oozing vesicular surface, whether the condition is vesicular intertrigo, active dermatitis or eczema with vesication, or indeed any acute vesicular dermatosis in which a serous exudate is present. Use of such a lotion will cause gumming-up of secretion under a crusted "cement" covering. Immediate toxic absorption takes place and invariably a generalized papulo-vesicular or papulo-erythematous eruption develops, usually involving the face and upper limbs. The stages of treatment as described for "sweat eczema" hold good in practically all cases. Never occlude an oozing vesicular surface.

Seborrhœic Dermatitis and Seborrhœic Intertrigo.

Patients suffering from seborrhœic dermatitis and seborrhœic intertrigo formed a large percentage of the total number of patients examined. It is not proposed to discuss seborrhœic affections in detail, but two or three points may be mentioned.

Frequently, discrete scaly seborrhœides of the trunk or limbs, and even a generalized seborrhœic dermatitis, had been mistaken for *tinea circinata* and energetically treated as such with Whitfield's ointment or stronger applications. Similarly, seborrhœic intertrigo of the groins, perineum, and perianal area had obviously been confused with *tinea cruris* (dhobie itch) and treated in the same manner.

The quiescent centre and active, raised, demarcated edges of a dhobie (*eczema marginatum*) as against the yellowy, moist, perhaps crusted and irregularly outlined areas (often with outlying satellite lesions) of seborrhœic intertrigo of the groins and perineum, may present difficulties in differential diagnosis. Microscopic and cultural tests may at times be necessary to establish a diagnosis; but in the great majority of cases there is obvious evidence of seborrhœic affection elsewhere, particularly of the scalp. Indiscriminate use of Whitfield's ointment for moist and active seborrhœic dermatitis has been responsible for the development of generalized exfoliative dermatitis.

The treatment of seborrhœic intertrigo was largely the same as for intertrigo due to hyperhidrosis. For the discrete seborrhœides of the trunk, the application of *Lotio Calaminæ* with resorcin and *Liquor Carbonis Detergens* (2% of each) was usually quite sufficient. The primary scalp infection was treated with *Unguentum Acidi Salicylici* and precipitated sulphur (2% of each).

The danger that seborrhœic eczema of the post-aural folds with secondary impetiginization may cause an impetiginous infection of the face has previously been mentioned.

It is interesting to note that two patients with a history of seborrhœic affection extending over many years, who were admitted to hospital with obvious clinical seborrhœic intertrigo of the axillæ and groins, developed classic lesions of *psoriasis vulgaris* on their extensor surfaces and trunk, after a period of some months; this is a transition which has been frequently commented on in recent overseas literature.

Dyshidrotic Affections of the Feet.

From the series of dyshidrotic affections of the feet cases of frank *psoriasis pustulosa* are omitted. Of the patients examined or admitted to hospital, a number had received treatment at other stations over varying periods of time, and almost universally a diagnosis of *tinea pedis* had been made and treatment for that condition had been given.

Experience of these, and also of cases in which no previous treatment had been given, indicated that in only two or three isolated instances was it possible to demonstrate microscopically or culturally the presence of a mycotic infection. Clinically, there was evidence of hyperhidrosis of a pronounced to extreme degree, with interdigital maceration, scaling and sometimes fissuring. Usually the condition was associated with vesication and scaling or maceration of the soles and heels, sometimes with extension to the dorsum of the feet and toes. In some instances the epithelium of the greater area of the feet was denuded, the surface being raw and vesicular and active eczematization taking place. The degree of incapacity was extreme.

It was evident that in a large percentage of cases in which energetic treatment with Whitfield's ointment, ethyl chloride spray *et cetera* had been given, the primary condition had been appreciably aggravated by such medication. Frequently *pes planus*, usually of severe degree, was also present. These conditions were regarded as dyshidrotic eczema and treated as such.

A series of microscopic and cultural examinations revealed the presence of epidermophyton in a minute percentage of instances only. The occurrence of primary dermatophytosis with secondary eczematization, more especially in tropical areas, is not disputed. However, from experience of the patients admitted to this hospital I was convinced, in this series at any rate—even in the isolated case in which epidermophyton could be demonstrated or grown on culture—that its existence was as a saprophyte one flourishing in the tissues previously denuded by hyperhidrotic processes. Moreover, any attempt at energetic fungicidal treatment was invariably followed by exacerbation of the condition.

The treatment carried out was the following:

1. In the acute stage with active vesication and eczematization, the patient was kept at rest in bed.

2. Foot baths were given every four hours of potassium permanganate solution (1 in 5,000); these were followed by the continual application of moist gauze packs of aluminium acetate (1% aqueous solution).

3. When active vesication had subsided, *Lotio Calaminæ Oleosa* with gentian violet (1%) or *Cremor Zinci* with gentian violet (0·5%) and ichthyol (3%) was applied.

4. Finally, when all the inflamed areas had cleared, the patients were given a dusting powder of *Pulvis Talci* with salicylic acid (3%) and zinc oxide (7%).

On their discharge from hospital, they were advised to bathe their feet twice a day in potassium permanganate solution, to dry them thoroughly and to use the dusting powder, and also to change their socks each day. In some instances recommendation for the fitting of metatarsal bars was made. X-ray therapy produced striking improvement in many cases. However, an unfavourable view was taken of these cases, and recurrences were not infrequent, particularly during the summer months. Subsequent microscopic and cultural examinations made during quiescent periods and during exacerbations of the hyperhidrosis likewise failed to reveal the presence of dermatophytosis.

Pyogenic Infections of the Legs.

Pyogenic lesions secondary to scabetic infection are excluded from the series under review, as is frank furunculosis of staphylococcal origin. A number of patients were seen with single or multiple lesions varying in size from one to six centimetres in diameter, and situated mostly on the anterior surface of the legs. In the majority of cases the lesions had commenced as

infected bites, cuts and abrasions. In some instances no such history was given, and the development of these lesions had been apparently spontaneous. Clinically these lesions, usually multiple, were those of impetiginized or ecthymatous ulcers, either crusted with a loose scab, from the margins of which seropus could be expressed, or with an unhealthy glazed surface, of obvious chronicity and showing no tendency toward spontaneous healing.

The patients looked ill in most cases, and usually an associated inguinal adenitis was present, which in one or two cases became suppurative. Lowered resistance and avitaminosis were regarded as predisposing factors in the development and chronicity of the lesions. The patients responded satisfactorily to the following treatment: (i) absolute rest in bed; (ii) a diet rich in vitamins, with especially increased intake of milk, fruit and green vegetables; (iii) the routine administration of "Potantol" (a vitamin *A* and *D* preparation); thirty minims three times a day produced apparent benefit; (iv) the exhibition of "M & B 760"; two tablets three times a day were given in the more severe cases. The benefit obtained from sulphathiazole given orally was evident. With regard to local treatment, crusting and scabs were removed with washes of "Lysol" (15 minims to a pint of water) or normal saline solution, and the affected area was then occluded with a zinc paste (Lassar's *sine* salicylic acid) including 2% of *Hydrargyrum Ammoniatum* (or 1% of scarlet red) and 10% of sulphanilamide ("M & B 125"). This was applied thickly on gauze and the dressing was gently changed every second or third day. This method of treatment was found to be most satisfactory.

Painting of the lesions with dye in aqueous solution was found to form a scab or coagulum over the lesions; but when the coagulum was lifted, the suppurative process was found to have continued unabated beneath the scab. The method of treatment described eliminated this risk, and the process of healing was by gradual granulation and peripheral epithelialization.

As has previously been mentioned, most of the patients with these infections appeared ill and devitalized, and recommendation was made for their admission to a convalescent depot before their return to their respective units.

Occupational Therapy.

There is one further matter which deserves mention, and that is the advisability of providing suitable occupational therapy for those patients who, although not confined to bed, are necessarily kept in hospital over long periods. The need for some recreational or interesting work to keep these men mentally occupied is obvious, and it is certain that if they are so engaged the benefit to their mental outlook and clinical progress is quite appreciable.

Acknowledgements.

My thanks are due to Air Vice-Marshal T. E. V. Hurley, Director-General of Medical Services, Royal Australian Air Force, for permission to publish this article.

Reports of Cases.

MALIGNANT NEOPLASM OF THE KIDNEY: AN UNUSUAL CASE IN CHILDHOOD.

By HAMILTON PATTERSON,
Captain, Australian Army Medical Corps, Australia.

Clinical Record.

ON January 9, 1941, I received an urgent telephone message from the country, asking me to see a child who was unconscious. The child, a girl, aged two years and ten months, had been "off colour" for three days. She had complained of abdominal pain, and her mother had given her the usual dose of castor oil. Subsequently she had appeared better, and on the day on which I was called had been running around, apparently in normal health. Later, and without having received any warning, her mother had gone onto the veranda and found the child unconscious on the floor. There was no previous history of other than childish illnesses.

When examined an hour later, the child was still unconscious. Her pupils were both dilated and unreactive. Twitching of the left side of the mouth was present. The temperature was normal. Examination of throat and ears revealed no abnormality, though the right tympanic membrane was difficult to see, owing to an excess of wax in the meatus. There was no evidence of respiratory infection. The abdomen was somewhat distended, but no rigidity was noticed and no mass palpable. All reflexes were absent, and some neck rigidity appeared to be present. The child was sent forthwith to hospital. On her arrival, the urine was tested and was found to contain 50% albumin, but no sugar. The pupils were still dilated and unreactive, and twitching of the left side of the mouth was still present. In addition, tonic contractions of the left arm and left leg were noticed, and the toes of the left foot were plantar flexed. The left arm and left leg felt warm to the touch, while the right arm and right leg were cold. The axillary temperature was 102° F., the skin was hot and dry, and the pulse rate was 190 to 200 per minute. The child looked desperately ill.

On the supposition that the condition was possibly meningitis, "M & B 693" was administered in orange juice from a spoon, no preparation for parenteral administration being available at the time. In addition, $^1/_{30}$ of a grain of morphine was given hypodermically for the extreme restlessness and to diminish tonic contractions. The patient, however, died about twenty minutes after her admission to hospital.

Post-Mortem Examination.

Being unsatisfied as to the cause of death, I requested a post-mortem examination, which I subsequently performed. Macroscopic examination of the brain showed it to be completely normal. On section of the abdomen, however, the left kidney was seen as a huge encapsulated tumour, measuring about seven inches by six inches by four inches. The abdominal aorta ran approximately through the middle of this tumour and divided into the two iliac vessels at the tumour's lower pole. The tumour was densely adherent to the vertebral column and was dissected out with considerable difficulty. The right kidney appeared normal and there was no evidence of secondary deposits. The cause of death was given as malignant neoplasm of the left kidney, and the kidneys were submitted for histo-pathological examination.

Three portions of the large tumour mass were selected for microscopic examination. In all three the appearances were similar. The tumour cells were rounded, with scanty cytoplasm and large, rounded nuclei. They varied in size, but on the whole they were large. Mitoses were numerous, indicating a high degree of malignancy. The cells were arranged in smaller or larger masses, with narrow fibrous septa here and there. The most likely diagnosis was considered to be neurocytoma. The pathologist stated that this type of tumour arose from the suprarenal medulla or sympathetic ganglia, and that many of the retroperitoneal tumours of infants were of this nature. Features of such tumours were a rosette arrangement of cells and the presence of fibrils. These features were not obvious in the present tumour. The tumour was neither a Wilms's tumour nor a lymphosarcoma.

Comment.

This is an unusual case of malignant neoplasm in a child of two years and ten months. The tumour was probably a neurocytoma arising from the sympathetic system; this would explain its dense adherence to the vertebral column. Because of its position and of the fact that dilated bowel was anterior to it, no mass was defined clinically, despite the size of the tumour. When first examined the child was unconscious, and the diagnosis was in doubt. Clinical signs suggested a cerebral condition, but examination of the urine revealed the presence of a large quantity of albumin. Autopsy solved the puzzle. This case emphasizes once again the desirability and need for more frequent post-mortem examinations.

Acknowledgements.

The pathological report was the work of Dr. E. H. Derrick, Director of the Laboratory of Microbiology and Pathology, Brisbane, to whom my thanks are due.

Reviews.

EAR, NOSE AND THROAT DISEASES.

THE need for such a text-book as "Diseases of the Ear, Nose and Throat", which has just been produced by Douglas G. Carruthers, has long been felt.[1] As stated in the introduction, it is essentially one for use of students and of the general practitioner—a book that is not too large for the student's requirements and yet comprehensive enough to form a useful component of his reference library in later years of practice. The various treatises hitherto published with the intention of fulfilling these conditions are, as a rule, far too comprehensive, and yet are very inadequate as text-books for the oto-rhino-laryngologist. In the production of such a concise work it must always be somewhat difficult to decide how far to go and when to stop; Dr. Carruthers has succeeded admirably in meeting this difficulty. The book is adequately and well illustrated and throughout the text is very clear, concise and sound, representing a true summary of the present-day position of ear, nose and throat practice.

The ætiology and symptomatology of various conditions are presented in an unusually clear way with careful explanations of the reasons for symptoms and for treatment, and from the general practitioner's point of view the book is intensely practical.

A most useful feature is the inclusion of a number of tables of differential diagnosis between various diseases, as well as of a number of summaries of various parts of the text.

In such a very practical book as this, however, it is a pity that mention is not made of a warning which is seldom, if ever, given in any text-book, namely, that the small amount of otorrhœa resulting from rupture of hæmorrhagic bullæ occurring on the drum or meatal wall often present in early stages of acute suppurative *otitis media* is not to be mistaken for a middle ear discharge which should be more copious. This often causes an unfortunate delay (usually amounting to at least a day) in the performance of an urgently indicated operation.

Four obvious errors in the text are as follows: on page 228, lines 6 and 24, the word "drum" in both cases should read "middle ear"; on page 261, line 22, "always" should read "already"; and on page 346, line 26, "muscle" should read "cartilage". Again, on page 107 the reference should be to Dr. B. Hiller, of Hobart, and not to Dr. K. Hiller, of Melbourne.

The appendix contains many very useful formulæ with full directions as to use.

The author is to be congratulated on producing a most excellent, useful and readable treatise which can be highly recommended for both student and general practitioner.

THE NERVOUS SOLDIER.

IN times like the present, John Bostock and Evan Jones are to be congratulated on their attempt to enclose "The Nervous Soldier" within the slim covers of what is little more than a pamphlet.[2] A great deal of information has been packed into a small space. The somewhat unleavened and unappetizing psychological theorizing which cumbers so much psychiatric literature has been happily jettisoned in this concise handbook, with the result that it is not only easy to read but intelligible to those not specially versed in psychological medicine. The authors display the rare gifts of lucidity and simplicity by means of which they make difficult subjects appear easy; and so, one imagines, they will win over many readers whose attitude has been biased by a natural repugnance to matters psychological. It is necessary to stress these virtues because the book is primarily intended for the guidance of medical officers in the various fighting services, medical officers who, in civil life, may have followed any of the various branches of medicine or surgery, but who, in wartime, will find themselves responsible for the mental stability, health and morale of the men in the ranks.

It is, therefore, a timely publication, written to fulfil an acknowledged need. It deals in the simplest way with psychological mechanisms influenced by the peculiar situations of war, the signs and symptoms of various psychiatric disorders and the differential diagnosis and disposal of psychiatric casualties. The chapter on treatment preserves an excellent balance between the older and newer therapeutic methods; but that on prophylaxis is good but does not go far enough. There is much useful and homely wisdom set down in the chapter on accessory aids. The authors rightly stress the evils of the pension system and warn against the danger of unwittingly infecting patients with the "pension complex". A pleasing feature of the booklet is its broad approach to the psychological aspect of all types of illness and the manner in which this becomes interwoven with the daily affairs of men. Behind the details of explanation and the exposition of homely aids there runs like a clear-cut refrain the philosophy of common sense.

It would be well nigh impossible to present such a subject as "The Nervous Soldier" in the succinct and abbreviated form which has here been attempted without leaving loop-holes for criticism. And probably the largest of these is connected with the authors' ideas on malingering. Disagreement is bound to occur over such a statement as: "Wherever doubt arises it is wiser to consider that the man is a malingerer rather than that he may be a neurotic." Many psychiatrists are likely to find this advice unpalatable, more especially as those who have investigated war neuroses at first hand in this present war have found so few cases of true malingering. Further, to speak about an "unconscious malingerer" (page 27) seems to be a contradiction in terms; for, surely, if a man's motives for gain are unconscious he cannot be classed as a malingerer. A psychiatrist should be particularly careful how he expresses himself.

Psychiatry was unprepared to meet the tasks imposed by the last world war; but in the intervening years great strides have been made; and the present conflict finds psychiatry ready to play an impressive part in the struggle. To achieve success this part must be played in conjunction with other branches of the medical services. Psychiatric principles must be disseminated. Medical officers and others must become more psychologically minded; and anything which helps to bring this about is aiding the war effort. This small brochure on the nervous soldier will therefore be doing an essential service in focusing attention on a major medical problem. Its merits should guarantee success in the achievement of its aims.

CLINICAL SYMPTOMS AND SIGNS.

"SYMPTOMS AND SIGNS IN CLINICAL MEDICINE", by Dr. E. Noble Chamberlain, is also an "Introduction to Medical Diagnosis".[1] It is unnatural that means and method should be divorced as they have heretofore. However, the student of today, armed with this handbook, will find his path cleared before him and the finger-posts erected in advance. This is a book for the tiro written by a teacher, and it is amazing how much it contains within its less than four hundred pages. After the interrogation and examination of the patient and the external characteristics of disease, the various systems of the body, fever, medical operations and instrumental investigations (including the electro-cardiograph), and clinical pathology and biochemistry are dealt with in turn, while chapters on the examination of sick children and radiology are contributed by two colleagues. Yet there is no suggestion of cramming or cramping; the author's style is easy, quietly conversational and clear. His sentences rarely exceed three lines. The illustrations are for the most part photographic and show plainly what they are intended to show.

He whose student days are dipping below the horizon and who wishes to revise the elementary in the light of the modern, can be promised easy enjoyable reading, and he will surely sigh: "We had nothing like this in our day."

In his preface the author pays tribute to the publishers of this edition "in overcoming almost insuperable difficulties after repeated destruction of their works by bombing". The tribute is indeed deserved.

[1] "Diseases of the Ear, Nose and Throat", by Douglas G. Carruthers, M.B., Ch.M. (Sydney), F.R.A.C.S.; 1943. Sydney: Angus and Robertson Limited. 8½" × 5½", pp. 405, with many illustrations. Price: 25s. net.

[2] "The Nervous Soldier: A Handbook for the Prevention, Detection and Treatment of Nervous Invalidity in War", by John Bostock and Evan Jones; 1943. Brisbane: University of Queensland. 7" × 5", pp. 96.

[1] "Symptoms and Signs in Clinical Medicine: An Introduction to Medical Diagnosis", by E. Noble Chamberlain, M.D., M.Sc., F.R.C.P.; Third Edition; 1943. Bristol: John Wright and Sons, Limited; London: Simpkin Marshall (1941), Limited. 9" × 5¼", pp. 464. Price: 30s. net.

The Medical Journal of Australia

SATURDAY, FEBRUARY 5, 1944.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction are invited to seek the advice of the Editor.

TOLERANCE AND CRITICISM.

In the preface to *Saint Joan* Bernard Shaw faces "the fact that society is founded on intolerance". "We may prate of toleration as we will", he writes, "but society must always draw a line between allowable conduct and insanity or crime, in spite of the risk of mistaking sages for lunatics and saviors for blasphemers." Shaw states that the degree of tolerance attainable at any moment depends on the strain under which society is maintaining its cohesion, and he refers to the proscriptions common in wartime. It will, of course, be held that proscriptions are unavoidable during war, and this is true. Sometimes in our thoughtful moments, however, we may ask ourselves whether all the thou-shalt-not's are really necessary or need be quite as repressive as they sometimes are. The danger to the State will make us call for "safety first", and we shall add that an evil prevented leaves society with a freedom of action that is impossible if an evil arises that has to be dug out by the roots. Fear underlies most of the intolerance of present-day society—during war, fear that the enemy may gain an advantage by some error or omission, fear that some home supplies may be inadequate or wasted, fear that morale may suffer, and a hundred other fears; in so-called peace, fear that trade will pass into other hands, fear that disease may become established, fear of internal dissension, and other fears, many of which will have money as a background. Bernard Shaw writes that we must persecute, even unto death. He holds that all we can do is, "first, to be very careful what we persecute, and second, to bear in mind that unless there is a large liberty to shock conventional people, and a well-informed sense of the value of originality, individuality and eccentricity, the result will be apparent stagnation covering a repression of evolutionary forces which will eventually explode with extravagant and destructive violence".

Any mention of tolerance or intolerance as a national characteristic will direct attention at once to enemy countries where, if we can believe only part of the information that comes from apparently reliable sources, intolerance has reached a degree hitherto unknown in the history of man. The present intention, however, is to deal rather with the individual. Tolerance is displayed by an individual in much the same kind of way as by a nation and for much the same reasons. The subject is one that may be a useful and heart-searching exercise. Tolerance may be a natural, innate characteristic of a person—he has a temperament which allows him to look at things in a detached way; he does not see in his surroundings something raised in opposition to himself, for he has natural understanding and is in tune with his environment. On the other hand, tolerance may be acquired consciously through a conviction that it is a proper attitude to adopt, or subconsciously from a growing understanding of the universe and of man's place in it. A tolerant man, it should be remembered, must not be compared with one who has a lazy mind, who, because he cannot bestir himself to think, takes things as they happen to come to pass in his cabbage-like existence. Thus tolerance calls for understanding. A man of understanding will be tolerant or intolerant according to his ideas of right and wrong and according to the extent, if any, to which he thinks expediency should direct his actions. Another not so worthy will have other criteria. Right or wrong may not obtrude themselves, but most questions calling for a tolerant or an intolerant attitude may be set up against a moral standard. What, then, of fear? As a rule a man with understanding will be less subject to fear than one not so endowed. Men fear the unknown and what they do not understand; they fear lots of other things as well. The unknown and the obscure are by large numbers of persons pushed on one side or repressed—they are not tolerated and the intolerance is as complete as the individual can make it, sometimes even to the point of absurdity. Apart from questions of right or wrong, a man of understanding may, of course, be intolerant because of fear or for some less creditable reason, and such a one is in unhappy case. The subject of tolerance is enormous, and to discuss it fully would call for reference to almost every sphere of man's activity. The medical profession is much in the public eye today by reason of the discussions on the future of medical practice. Opinions are expressed by the laity about doctors, by doctors about the laity, and by doctors about other doctors. In regard to these opinions given and taken the subject of tolerance is important.

As a general statement it can be maintained that a man's largeness of mind and knowledge of human nature are reflected by his reactions to criticism and his ability to make it. Let us take the latter first. One who sets out to criticize an event, a person or a group of persons should first of all try to purge himself of all malice, and then he should have in mind some object to be achieved by the opinions he proposes to express. He should always ask himself whether his proposed remarks are unkind, and if they are he will have to find some very urgent reason before he proceeds with them. When these conditions are satisfied his criticism may be offered. When criticism is put into written words the tone should be dignified; satire is permissible, but satire can be dignified. Criticism is

generally described as destructive or constructive. To tear down is much easier than to build up. Generally speaking, those who by their words tear down an edifice built on the plans of another should have something to put in its place—if they do not approve what has been done and find it necessary to say so, they should be willing to point to the more excellent way. But as already stated, and repetition will but serve to emphasize the statement, there should be a reason, an object, behind the remarks. A man who insists on his own view just to show how clever he is, how much cleverer presumably than the other man, is not to be admired. This type of man is very often the type that will not tolerate criticism from other people. Those who are fond of criticism—of "having a go at" someone else—often forget that there is always the other side, the taking side. In medical circles of people who hold or ought to hold one another's respect, one who is criticized should start by assuming that no personal illwill is intended by the critic. The first thing to do is to search for the motives behind the words used. If the object is not clear or if it appears that an unjust statement has been made, the correct course of action for the person concerned is that he should ask the critic personally for an explanation. Many a young graduate, it should be noted in passing, has learned this early in his career because one older and more experienced has taken the trouble to curb youthful impetuosity. It must never be forgotten that words taken from their context may assume a complexion not intended for them; moreover, if a person is closely concerned with a particular medical subject he is quite likely to misconstrue a statement or to limit its application because of his own restricted vision. Detachment is desirable, and this is true of both critic and criticized. Detachment will make for breadth of vision, but close proximity for mental myopia if not strabismus. The man who can take a detached and, shall we say, an objective view of statements about his own activities, is generally free from fear that he may suffer in his person or his prestige—he has no need to fear—and he is at least a candidate for the ranks of tolerant men of wide understanding.

Current Comment.

THE ABATEMENT OF NOISE.

THE ill effects of noise were discussed in these columns in the issue of February 18, 1939. It is clear that noise can have harmful effects on the human body. It has been proven that disabilities are suffered by men exposed to excessive noise. Apart from this, it is common sense to assume that the constant repetition, or the actual continuity, of some vile assault on the human ear (and, of course, the brain) must be damaging. There is a tendency to accept noise as a necessary accompaniment of our modern so-called civilization; but surely this is a wrong attitude. All the machine-made noises can be abated. Many can be eliminated. The manner of approaching the problem has been discussed recently by Carey P. McCord and John D. Goodell.[1] They point out in the first place that the expansion of industry in wartime has greatly increased noise production, and they suggest that the abatement of noise should be a wartime measure of great importance. They express the opinion that "behind some of the more publicized evils of the day, such as wilful absenteeism, may be found the insidious disturbances from noise". They proceed to discuss certain laws in sound production. These are necessarily given in abbreviated form here. The first is that when a vibrating body strikes a series of rapid blows against a substance "the impact is either cushioned or transmitted in direct proportion to the mass per unit of volume of the material which receives the blow". Secondly, "just as an electrical circuit presents an impedance to the flow of current, so the cross section of an acoustic conductor presents an impedance to sound energy", the most efficient transfer of energy between two media occurring when the impedances are matched. Thirdly, any given object capable of producing sound, will, when stroked, struck or plucked, "always generate a sound wave containing the same fundamental frequency". Finally, a sound wave generated in the open air "continues to travel until the energy is dissipated"; but when it is generated in a room "it is reflected from the walls, ceiling, floor and furnishings, the energy finally being dissipated during countless journeyings between reflecting surfaces". This means simply that the sound reverberates through the room; the human ear detects and the brain recognizes the original impulse; "the rest is a confusing jumble". It is possible in certain circumstances for a focusing effect to be obtained, large volumes of sound being reflected from surfaces remote from the source.

A remarkable phenomenon is described as follows:

> If two sound waves of equal intensity and frequency coincide in such a manner that the compressions of one correspond to the rarefactions of the other, they are said to be in opposite phase and the result approaches silence.

A knowledge of this can be applied practically. The noise is picked up by a microphone, the output of which is fed through an amplifier to a series of loud speakers housed in baffles facing away from the source of noise. "The elements of the system are so arranged that the sound wave from the speakers occurs 180 degrees out of phase with the wave from the sound source and produces cancellation."

McCord and Goodell mention a number of principles in the abatement of noise and discuss their application. Several of these are mentioned here. When a small object, such as a piano string, is set into vibration away from its normal environment its sound is puny; but place it in firm contact with the sounding board of a piano and it is capable of producing a sound of great volume. Small vibrating bodies should not be allowed to remain in contact with anything that might act as a sounding board. A simple and common example of this is the disturbing noise of a watch on a table and its insignificant noise when it is hanging from its chain. Secondly, air conditioning makes possible the elimination of much external noise. An example of this is the comparative quiet of an air-conditioned railway train. Again, in certain circumstances, some degree of reverberation in a room is desirable; for if there is none, such sounds as irrelevant conversation will be heard and will disturb the worker. In a reverberant room "such sounds are blended in the general noise level, and the distraction is decreased". Fourthly, the deliberate mis-matching of impedances and the desirability of using non-elastic materials in minimizing the transmission of noise are mentioned. This principle is the one that most people think of when the subject of noise abatement arises. It has many obvious applications in architecture.

McCord and Goodell describe how they tackled a specific problem. A manufacturing plant had a weekly output of some millions of steel balls. These balls were scooped up from sheet-metal containers and poured on metal tables for inspection by about twenty workers; as they were examined they were tossed into other metal containers. Near by they were examined for size in automatic machines, pouring from large hoppers into smaller ones, travelling through metal chutes to sizing rollers, falling through to other chutes and eventually dropping into metal boxes. The noise was prodigious. To secure its abatement, all portable containers were made of plywood; table surfaces were covered with plywood; chutes were lined with leather; hoppers were refilled when half-empty, so

[1] *The Journal of the American Medical Association*, October 23, 1943.

that the tendency to vibration was dampened; the under surfaces of sheet-metal appliances on which the balls travelled were treated with a quick-drying mineralized paste; piping was insulated; a double wall was erected for the protection of adjacent offices.

Walls of houses should be made of materials of high density and mass. This statement appears to be anomalous, as such materials are efficient conductors of sound. But McCord and Goodell point out that as they have a high impedance and a low natural frequency they are difficult to vibrate, and they are unlikely to become a source of secondary noise or to function as a projector or radiator of noise. The operator of a machine determines by its sound whether or not it is running smoothly. Where surrounding noise is excessive many workers complain of the constant strain of listening for the sound of the machine. It is like attempting to use a stethoscope in a noisy room. In some cases it is not the noise, but the sudden change in barometric pressure that produces trauma; for example, in drop forging, where the great hammer suddenly displaces a large amount of air. Deafness from gunfire results from "the primary pulse of air pressure rather than from the sound modulation of the air".

These are but a few of the many features of this interesting paper. All who can are advised to read the whole of it. We have put up with noise long enough. As McCord and Goodell say, "Patient endurance of excessive and perpetuated man made noises is no longer a virtue"; the injury from noise "such as now widely attends human life is real and not a matter for speculation". This is a subject about which the medical profession should know something; knowledge is the first step to action.

ABSENTEEISM AMONG WOMEN.

A SHORT report on absenteeism among women has been published in England by the Industrial Health Research Board of the Medical Research Council. The inquiry was made at the request of the Ministry of Supply and the work was carried out by S. Wyatt, R. Marriott and D. E. R. Hughes.[1] The report is concerned with the amount and distribution of absenteeism rather than its causes, and all reference to type of work and numbers employed in the factories has been omitted for security reasons. Some interesting observations are recorded in spite of these restrictions. Two factories were chosen; the inquiry extended over a period of six weeks and random samples were taken from among the women workers. From Factory A the sample included 819 workers and from Factory B the sample comprised 495. The periods chosen were unaffected by leave and annual holidays and the observations were made at a time of year when absenteeism is usually low.

It was found that very few women were in the habit of losing one or two shifts each week, but a large majority were absent for varying lengths of time at irregular intervals. The conclusion is that whatever the main causes of absenteeism, they were not regularly recurrent, but "were as varied as individual needs and desires". Married women lost more time than single women, and as a rule their absences were spread over a greater number of weeks; they tended to have more longer and fewer shorter absences than single women. In the period of six weeks 68·3% of the absences from Factory A and 60·6% of those from Factory B were from single shifts, but these accounted for only 34·9% of the total number of shifts lost in Factory A and for 24·8% of those lost in Factory B. Larger proportions (38·5% and 52·8%) of the total time lost were due to full week absences; these were mainly due to sickness. Absenteeism on the morning shift was higher than on the afternoon and night shifts, especially in Factory A. The excess on the morning shift was most noticeable in the case of single shift absences. Absenteeism varied on different days of the week; it was highest on Saturday and low on pay-day. There was a tendency for absenteeism to increase about the middle of the week. The higher absenteeism was particularly noticeable among married women, but the number of regular absentees was small. Women below the age of twenty-five years lost more time than older women; this was particularly true of married women.

Absenteeism will clearly vary with the type of work done at a factory and with other factors. In the present instance absenteeism was much higher at Factory A than at the other. Three factors are mentioned as worthy of consideration (the type of work, it must be remembered, is not recorded); they are: (*a*) the size of the factory—at the time of the inquiry Factory A employed five times more women than Factory B; (*b*) the unusually rapid growth of the factory; (*c*) the isolated position of the factory. To offset these factors in Factory A, Factory B had a higher proportion of married women. The findings in this inquiry clearly cannot be taken as typical of industry as a whole. They do show, however, that many factors operate to cause absenteeism. In this report no mention is made of the health conditions of the two factories; in the absence of this information it will be safe to presume that the conditions were good. The conclusion is justified that the "personal causes of absenteeism" need to be studied, and from this follows another, that an individual method of treatment is necessary.

[1] "A Study of Absenteeism among Women", by S. Wyatt, R. Marriott and D. E. R. Hughes; Medical Research Council, Industrial Health Research Board Emergency Report Number 4; 1943. London: His Majesty's Stationery Office. 9¼" × 6", pp. 12. Price: 2d. net.

CONTACT DERMATITIS FROM HAIR LACQUER.

IN the issue of March 14, 1942, reference was made in these columns to dermatitis resulting from the use of nail polish. The dermatitis in one series of cases was shown by patch tests to be due to the basic principle of the polish (nitro cellulose) and to benzol. The use of nail polish is probably atavistic, but it is a fashion, and it is not surprising to read that another fashion adopted by women, the use of hair lacquer, is sometimes followed by dermatitis. J. B. Howell, who states that the condition is comparable to dermatitis sometimes caused by resin-finished underwear, has had experience of fourteen cases.[1] Lacquer is applied in the last step of the "up sweep" coiffure. The liquid is usually applied by a spray. The ears, the sides and the back of the neck receive some of the lacquer and are the sites most commonly affected. A dermatitis of the arms and forearms has been seen following the habit of resting the head on the arm during sleep. Lacquer hair pads also cause the condition, and the chief components of these pads are two synthetic resins, 1% caustic soda and 0·06% ammonia. Women who had used liquid hair lacquer for some years became affected when on account of the simplicity of application they used the special lacquer hair pads. In all cases following the change to lacquer pads, as well as in those in which the women used lacquer originally in the form of pads, there was an incubation period of sensitivity of one to two weeks. Patch tests carried out with the brand of lacquer pads used by these patients produced positive results within twenty-four to forty-eight hours of the development of sensitivity. When these patients were tested with different brands of liquid hair lacquer negative results were obtained. Howell points out that his findings are different from those recorded in regard to nail polish dermatitis. When a person is sensitive to one kind of nail polish he is usually allergic to all brands of nail enamel. A person who is allergic to nail lacquer is not necessarily sensitive to hair lacquer. In another paper in the same journal Stephan Epstein confirms many of Howell's observations. He points out that hair lacquer pads consist of powder puffs which have been soaked with some form of lacquer; the lacquer of pads is more "gluey" than the lacquer which is applied with a spray.

[1] *The Journal of the American Medical Association*, October 16, 1943.

Abstracts from Medical Literature.

THERAPEUTICS.

Pethidine.

F. W. BRANWOOD (*Edinburgh Medical Journal*, March, 1943) has described clinical trials of pethidine. This drug, called dolantin in Europe and demeral in America, is the hydrochloride of the ethyl ester of 1-methyl-4-phenylpiperidine-4 carboxylic acid. It is antagonistic to acetylcholine and depresses smooth muscle somewhat like atropine, but its action is said to be 10,000 times weaker than atropine. It is said to have an analgesic action similar to morphine in renal and biliary colic, but more rapid and more prolonged. The drug was used in a number of cases for the relief of pain, subcutaneously and intravenously in doses of one cubic centimetre. In headache of hypertension and after concussion and in renal or biliary colic, pain was quickly relieved, but no relief was observed for painful conditions which were not associated with muscle spasm. Intravenous injection was often associated with faintness and giddiness, and seemed to present no advantages over subcutaneous injection. Intravenous injection was associated with a rapid fall in blood pressure, which was of short duration. The initial fall affected both systolic and diastolic pressures to the extent of 45 to 70 millimetres of mercury systolic and 30 millimetres diastolic pressure. This fall accounted for the symptoms of faintness and giddiness. The blood pressure returned to normal in three or four minutes, and a secondary fall of a few millimetres of mercury occurred 30 to 50 minutes later. Intramuscular and subcutaneous injections caused a more prolonged and slower decline of blood pressure affecting systolic and diastolic pressures to a less degree, the maximum effect being noted in about 40 minutes. There was no change in blood count or in the urine due to the drug. The usual dose was one cubic centimetre containing 50 milligrammes of the drug. Oral administration in the few cases recorded appeared to be ineffective.

Biotin.

W. TRAGER (*The Journal of Experimental Medicine*, June, 1943) has investigated the influence of biotin upon susceptibility to malaria. Chickens and ducks deficient in biotin developed much more severe infections with *Plasmodium lophuræ* than did non-deficient control animals. While a very mild degree of biotin deficiency sufficed to increase susceptibility, even an extreme degree of pantothenic acid deficiency had no effect. Biotin deficiency also increased the susceptibility of ducks to *Plasmodium cathemarium*. In animals infected with *Plasmodium lophuræ*, the concentration of biotin in the plasma as well as in the red cells rose during the course of the infection, reached a peak at about the same time as the parasite number reached its peak, and then returned to normal as the infection subsided. While the administration of additional biotin to animals partially deficient in biotin could be considered a specific measure tending to lessen the severity of infection with *Plasmodium lophuræ*, the injection of biotin into animals fed a diet adequate in this vitamin had no antimalarial effects, perhaps because the excess biotin was rapidly removed from the blood.

Chemotherapy by Blocking Bacterial Nutrients.

H. MCILWAIN AND F. HAWKING (*The Lancet*, April 10, 1943), having in mind the facts that many bacteria need for their growth small amounts of vitamin-like substances and that pathogenic organisms obtain some of these from their host, and supposing that the chemical compound pantoyltaurine might inhibit the growth of bacteria needing pantothenate (a vitamin-like substance of this type) by displacing it from the points at which it interacted with microbes, and so in effect starving them of a substance essential for their growth, have administered pantoyltaurine to rats and found that it protected them from 10,000 lethal doses of hæmolytic streptococci. They suggest that since sulphonamide-resistant streptococci and some strains of diphtheria bacilli have been shown by them to be sensitive to pantoyltaurine, practical application to human therapy may be possible.

The Lancet in a leading article in the same number states that McIlwain and Hawking have described possibly the first case of successful chemotherapy in which every step had been planned beforehand. It describes pantoyltaurine as a counterfeit compound which the organism will accept as one essential for its growth and too late find useless for its purpose.

The Direct Effect of Antimalarial Drugs on Plasmodium Lophuræ.

R. I. HEWITT AND A. P. RICHARDSON (*The Journal of Infectious Diseases*, July-August, 1943) present the results of a study of the direct plasmodicidal effects on *Plasmodium lophuræ* in ducks of quinine, "Atebrin" and "Plasmoquine". Parasites from drug-treated donors were inoculated into susceptible ducks, and the results were measured quantitatively. Detailed morphological observations were made. The results lent support to the concept of a direct therapeutic effect of the drugs. Degenerative changes occurred in the parasites at various times after the administration of the drugs; the changes were not only general, but specifically produced by each drug. When degenerative changes in the parasites occurred in the donor bird, these changes were found in the recipients for as long as three days after inoculation. This showed that the parasites were not at once removed from the circulation by the phagocytic system of the new host. The method of subinoculation was such that no small amounts of drug could have been carried over into the new hosts. The authors conclude that without doubt in *Plasmodium lophuræ* infections the parasite is attacked by quinine, "Atebrin" and "Plasmoquine". The same kind of degenerative changes in the parasites can be produced *in vivo* as *in vitro*, and "Plasmoquine" at least appears to be directly plasmodicidal in the unaltered form. However, treated parasites may produce infections, even though after considerable delay. The authors have as yet formed no opinion as to the mode of action of the drugs; but they state that the drugs certainly cause degeneration of the parasite, as shown by its changed appearance during treatment and by the delayed infection curves when blood from treated birds is used as an inoculum. It does not appear that phagocytosis is directly stimulated or that other immune mechanisms are activated by the drugs; but the natural immune mechanisms of the host may be aided, because the rate of reproduction of the parasites is retarded. "Atebrin" produces its effect on the parasites later than quinine and much later than "Plasmoquine"; it attacks the smaller parasites long before changes in the larger asexual forms and gametocytes can be observed. Morphological observations showed that all stages of the parasite are affected by quinine, "Atebrin" and "Plasmoquine". The gametocytes are always affected last, regardless of the drug used. There is no specific effect of any of the drugs on any one stage of the parasite to the exclusion of all other stages.

The Use of Calcium Pantothenate for Grey Hair.

I. KERLAN AND R. P. HERWICK (*The Journal of the American Medical Association*, October 16, 1943) state that calcium pantothenate has been offered to the public as an effective agent to restore colour to grey hair. They have conducted a controlled long-term study in order to observe the effect of the drug. Twenty milligrammes of calcium pantothenate were given daily for six months to twenty-seven white men and women with greying hair. Colour measurements of representative samples of hair obtained from each of the subjects at the outset, during and at the conclusion of the study revealed no significant colour change. From these findings, from the clinical evidence available in the literature and from personal communications the authors conclude that calcium pantothenate is of no value in the restoration of colour to grey hair.

Aminoacridine Antiseptics.

J. UNGAR AND F. A. ROBINSON (*The Lancet*, September 4, 1943) have investigated aminoacridine antiseptics. They state that when it was first used in the treatment of wounds, acriflavine was thought to be relatively non-toxic. About 1932-1933, however, occasional toxic symptoms were reported. Linnell and Albert and their colleagues then set to work to find other aminoacridines which would be equally efficient but less harmful than acriflavine. The most promising were 2:7-diaminoacridine monohydrochloride and 5-aminoacridine hydrochloride. The authors have reinvestigated the bacteriological and pharmacological properties of these two substances. They find that both are potent antiseptics. However, although they are closely related to one another and to proflavine, there are important differences in the properties of the three compounds. Experiments *in vitro* indicate that 2:7-diaminoacridine monohydrochloride exerts its bacteriostatic effect in a very short time; it has a relatively high solubility and its systemic and local solubility is low. Experiments on animals show that on injection into subcutaneous tissues 2:7-

diaminoacridine monohydrochloride is less damaging than proflavine or acriflavine, while in powder form it interferes less with wound healing. The same is true to a less extent of 5-aminoacridine hydrochloride, which has the added advantage of being non-staining.

G. A. C. MITCHELL AND G. A. H. BUTTLE (*ibidem*) describe their experiences with 2:7-diaminoacridine monohydrochloride (diflavine, they call it) in the treatment of wounds. They state that diflavine and proflavine are less toxic than 5-aminoacridine hydrochloride. They have used diflavine powder as a wound dressing in 47 cases and proflavine powder in over 200 cases. Benefit was produced in almost every instance. Most of the patients treated were battle casualties and the lesions were of all grades of severity. The impression gained was that diflavine was not quite so effective as proflavine. Diflavine and proflavine are effective *in vivo* against streptococci, staphylococci and clostridia. Diflavine is possibly also effective against *Bacillus pyocyaneus*.

NEUROLOGY AND PSYCHIATRY.

Pubertas Præcox in a Female Patient Caused by a Ventricular Cyst.

DAVID J. FLICKER (*The Journal of Nervous and Mental Disease*, July, 1943) reports a fourth case of *pubertas præcox* in a female, there having been only three such cases reported previously in which the condition was of central nervous system origin. This child was seen first by the author when at the age of three years she presented precocious sexual development and rapidly failing eyesight. Muscular weakness and left internal strabismus were noted together with commencing optic atrophy. Full clinical, neurological and radiological findings were reported prior to operation, which revealed a cyst in the third ventricle. The operation was successful, although the patient's gait is still hemiplegic, the sexual development remains precocious, and the personality reveals thalamic outbursts of laughing and crying, associated with some intellectual retardation.

Operative Procedure and the Ætiology of Psychosis.

JANE E. OLTMAN AND SAMUEL FRIEDMAN (*The Psychiatric Quarterly*, July, 1943) have studied the question of post-operative psychoses. They commence with an historical survey, followed by an examination of 1,605 cases which they place in three groups: (*a*) cases in which the operation appeared to be a primary ætiological factor, (*b*) cases in which surgery played a major but not the primary role, (*c*) cases in which operation was merely another factor which led to the production of the psychosis. A number of case histories are presented. The authors conclude that there is no distinct clinical entity to be regarded as a post-operative psychosis. Elderly patients, following operation, sometimes display confusion, disorientation, agitation and delusions of a mutilative character. In younger patients the clinical symptoms are quite variable, and any of the recognized psychiatric entities may develop. The latter part of the contribution consists of a discussion in which, among other things, the authors point out that surgery in elderly patients should be undertaken only after full consideration of all psychosomatic factors. The presence of cardio-vascular disorders or metabolic disturbances should call for special caution. The history of a previous breakdown is an additional risk. Operations upon the eye are much more likely to produce a psychosis because the eye, a sexual symbol, reawakens the primitive castration fear. Pelvic operations on female patients at the involutional period are more likely to be followed by a psychosis than similar operations at other times of life. Finally the authors believe that it is hazardous to press for a surgical operation when abnormal anxiety or other psychiatric disturbance becomes manifest in the pre-operative period.

The Conservative Use of Shock Therapy in Mental Illness.

THE indiscriminate use of the newer methods of shock treatment for mental patients is condemned by Samuel R. Rosen, Lazarus Secunda and Knox H. Finley (*The Psychiatric Quarterly*, October, 1943), who themselves recommend a "middle-of-the-road" method. Their first point is to emphasize a proper selection of cases. They are of opinion that shock treatment should not be given when clinical investigation supports the possibility of cure by psychotherapy within a few months. They claim that shock treatment does little good when the psychosis is merely an episode in a personality suffering from a life-long maladjustment. They recommend the use of the curare and β-erythroidin-hydrochloride techniques to prevent such complications as fractures. Another point is the limitation and spacing of treatments. The authors are of opinion that in most cases too much treatment is given. They suggest that after four or five shocks, if the patient's condition has commenced to improve, the treatment should be withheld to allow the improvement to "ripen". Finally, they stress the need for complementary psychotherapy. The shock should be used as a means of "bringing the patient to his senses"; that is, getting him in touch with reality and likewise accessible to psychotherapy. Fourteen case histories are given to illustrate these points in treatment. Electroencephalographic tracings were made before, during and after the shock treatments; but no evidence was found to indicate that the drug ("Metrazol") had the slightest influence upon cerebral electrical potentials.

Cataplexy and its Treatment.

SIX cases of cataplexy are reported in detail by John B. Dynes (*The Journal of Nervous and Mental Disease*, July, 1943). Cataplexy is a symptom frequently associated with narcolepsy, though the mechanism of this relationship is not understood. Benzedrine frequently relieves the narcoleptic symptoms, but has no effect on cataplexy. The author states that 30 to 75 grains of potassium chloride given each day by mouth succeeded in relieving all his patients of their cataplectic symptoms, but this treatment had no effect on the narcolepsy. He mentions the similarity which appears to exist between cataplectic attacks and the momentary muscular weakness and more prolonged paralytic attacks observed in patients with periodic familial paralysis. One patient in this series suffered from somnambulistic paralysis which appeared either when he woke from a natural sleep or directly following a narcoleptic episode. In such a state the patient was fully conscious and aware of his surroundings, but unable to move a muscle, open his eyes or speak.

A Psychosomatic Study of Maladie des Tics (Gilles de la Tourette's Disease).

A CASE of *maladie des tics* occurring in a boy aged eleven years is presented by Margaret Schoenberger Mahler and Leo Rangell (*The Psychiatric Quarterly*, October, 1943), who had him under observation and treatment for two and a half years. Having reviewed previous literature, they give clinical details of the patient, with physical examination and laboratory findings and observations of the patient under psychotherapy. The ætiology of the disease is obscure. The classical syndrome consists of gradually increasing, uncontrollable involuntary movements spreading to involve the entire body, with utterance of inarticulate cries, echolalia, echokinesia and finally coprolalia, which is pathognomonic of the disease. It is a veritable "incontinence of the emotions", expressed at first so the authors believe through the striopalliate connexions, but later coming under the influence of the higher controlling cortical centres. The writers present evidence in support of the contention that there is an underlying substratum of organic disease of the central nervous system—a constitutional neurophysiological inferiority which renders the patient more susceptible to emotional and psychodynamic forces. Their analysis shows that the tics are the expression of an emotional conflict, a partial gratification of repressed instinctual impulses and at the same time a defence against them. The involuntary sounds and animal-like noises, partly aggressive and partly erotic, represent the prodromal stage in the development of coprolalia. The disease carries a bad prognosis, and in the case reported but little improvement was achieved by intense and continuous psychotherapy.

Mental Symptoms in Multiple Sclerosis.

A STUDY of the mental symptoms encountered in twenty-eight cases of multiple sclerosis is presented by Carl Sugar and Raymond Nadell (*The Journal of Nervous and Mental Disease*, September, 1943). These cases were of more than ten years' standing and were studied over a period of six to eight months with special emphasis on the emotional affective symptomatology. These emotional changes fell into three groups: (*a*) increased cheerfulness regarded as a definite change in the prevailing mood, (*b*) a marked sense of well-being out of proportion to the physical state, (*c*) a tendency to increase of affective expression, incongruous at times with the underlying mood. These changes are believed to occur on account of the loss of inhibitory mechanisms due either to definite organic lesions or psychogenic factors concerned with the patient's reaction to the illness. Actual psychoses were observed.

British Medical Association News.

MEDICO-POLITICAL.

THE Federal Council of the British Medical Association in Australia, meeting in Melbourne as this issue of the journal goes to press, wishes to inform members of the Association that no credence should be given to statements that have appeared recently in certain newspapers to the effect that the British Medical Association has agreed with the Commonwealth Government on a health service scheme for all Australia at the recent conference between the Parliamentary Joint Committee on Social Security and representatives of the medical profession. Agreement was reached only in regard to the general principles which should govern a medical health service and all decisions were tentative and without commitment. A full statement on the subject will be published in this journal in a future issue.

SCIENTIFIC.

A MEETING of the New South Wales Branch of the British Medical Association was held on October 21, 1943, at Saint Vincent's Hospital, Darlinghurst. The meeting took the form of a number of clinical demonstrations by members of the honorary medical staff of the hospital.

Hypoplasia of Bone Marrow.

DR. O. A. DIETHELM showed an Indian seaman, aged twenty-six years, who had been admitted to hospital on September 21, 1943. The history given by the patient was limited; but it was known that he was in good health when he left Calcutta about three or four weeks earlier. The onset of his illness was evidently acute. After exhaustive questioning, it was elicited that he had suffered from malaria many times.

Examination showed the patient to be thin and emaciated; he was obviously anæmic, despite his colour. The conjunctivæ were white and the nails were pale. The temperature was 105° F. No rash was present, and respirations were normal. The pulse was regular and the tension low; the systolic blood pressure was 90 millimetres of mercury and the diastolic pressure was 50. The heart was not enlarged; a systolic murmur was audible at the apex and also at the aorta. No œdema of the feet was present. The breath sounds were clear, and there were no accompaniments. The tongue was smooth and moist. The throat was sore, but no ulcers were present. The liver was just palpable, the spleen was tender and hard and the abdomen was distended. The knee jerks were absent, but no other abnormality was detected in the central nervous system. A blood count, made urgently, gave the following information: the erythrocytes numbered 1,000,000 per cubic millimetre, the colour index was 1·1, the hæmoglobin value was 22%, the number of platelets was reduced, considerable anisocytosis was present and no nucleated erythrocytes were seen; the leucocytes numbered 600 per cubic millimetre, 26% being neutrophile cells and 70% lymphocytes. The Van den Bergh test failed to produce a reaction, and no malarial parasites were found.

A blood transfusion was given. On September 22 sternal puncture was performed, and the following information was obtained by Dr. A. H. Tebbutt. Of the nucleated cells, 21% were megaloblasts, 33% erythroblasts, 16% normoblasts, 5% premyelocytes, 6% myelocytes, 12% metamyelocytes, 4% segmented neutrophile cells, 2% lymphocytes and 1% monocytes. The myeloid-erythroid ratio was 0·4 and the leuco-erythrogenetic ratio 0·3. Thus a reversal in the marrow function was present, erythropoietic activity being greater than leucopoiesis, which was much diminished. Yet erythropoiesis was probably also reduced, and it was megaloblastic in type. A proportion of macropolycytes—large, hypersegmented neutrophile cells—was found in the marrow, as in the blood; it was pointed out that such cells were present in pernicious anæmia. The number of platelets in the marrow appeared to be reduced; yet the fluid obtained by sternal puncture clotted rapidly, as usual. The reticulocytes were much less numerous than normal in the marrow also. Cabot's rings were present. The circulating blood was investigated. Reexamination of blood films revealed considerable anisocytosis, poikilocytes, macrocytes, and occasional polychromasic cells, some of which contained Cabot's rings. A very few nucleated erythrocytes, one erythroblast and one normoblast were found. Reticulocytes were present. The number of platelets was reduced and no clumping occurred; but they were not reduced in number critically as in thrombocytopenic purpura. Dr. Tebbutt considered that the evidence did not suggest aleuchæmic leuchæmia. Pronounced anæmia, some thrombocytopenia and pronounced leucopenia were present—in fact, agranulocytosis. The condition seemed to be possibly refractory anæmia (hypoplastic anæmia). Some features resembled severe pernicious anæmia; but the indirect Van den Bergh reaction failed to support this diagnosis. Dr. Tebbutt suggested X-ray examination of the limb bones, and when possible the performance of a fractional test meal examination; he also thought that large doses of liver should be given parenterally. On the same day the hæmoglobin value was found to be 34%, and the patient was given another blood transfusion. Three transfusions were given, then 6·0 cubic centimetres of "Campolon" were administered, followed by 2·0 cubic centimetres per day for ten days; after that period 2·0 cubic centimetres were given every second day. On September 24, the hæmoglobin value was 54%. On September 29 the erythrocytes numbered 3,400,000 per cubic millimetre, 4·6% being reticulocytes, and the hæmoglobin value was 75%; the leucocytes numbered 4,600 per cubic millimetre, 37% being neutrophile cells. On October 8 the erythrocytes numbered 3,350,000 per cubic millimetre and the hæmoglobin value was 75%; the leucocytes numbered 5,000 per cubic millimetre. On October 15 the erythrocytes numbered 3,750,000 per cubic millimetre, the number of platelets was normal and the hæmoglobin value was 77%; the leucocytes numbered 10,800 per cubic millimetre. A fractional test meal examination and X-ray examination of the long bones produced normal results.

A provisional diagnosis was made of hypoplasia of the bone marrow, due to an unknown toxin. In the differential diagnosis refractory anæmia (hypoplasia of the bone marrow due to some toxic process) and malaria were considered. Malaria was excluded because of the failure to discover parasites in the blood in spite of repeated attempts, and the small number of leucocytes. The only factors against pernicious anæmia were the failure of the Van den Bergh test to produce a reaction, and the presence of hydrochloric acid in the stomach. Agranulocytosis was excluded for the reason that the number of erythrocytes was too small; it was known that in agranulocytosis erythropoiesis was normal. True aplastic anæmia was considered a likely possibility; but it was excluded by the response of the bone marrow to therapy. Achrestic anæmia was also excluded.

(*To be continued.*)

Correspondence.

A CIRCULAR OPERATING FRAME.

SIR: It has recently been brought to my attention that a circular operating frame, which was designed by Mr. Hugh Trumble, was on sale in Melbourne some fifteen years ago.

It is regretted that no mention of this frame, which had not previously been brought to my notice, was made in my recent article in this journal.

Yours, etc.,

M. HALL.

421, Ruthven Street,
Toowoomba,
Queensland.

January 5, 1944.

THE FUTURE OF AUSTRALIA.

SIR: One has read so many pages in your journal concerning the future of medical practice, that it is felt that a few thoughts on the future of Australia as a whole will not appear out of place.

There is no doubt that our country is profiting enormously by the war as regards development of industries and communications, irrespective of the government in office. This period of prosperity must be maintained after the war. Although some financial commitments may decrease many other items, such as better housing, a standing army and air force, will be this country's responsibility.

Australia, with its meagre population and slow increase of manpower, must pursue a vigorous immigration policy

immediately the war ends in Europe. So far one has not found this fact sufficiently stressed in post-war reconstruction plans. Otherwise we will once more revert to a dependent primary producing dominion. Wisely controlled and selective immigration is to be desired, but a regulated influx of a coloured race, such as the Chinese, is necessary if the resources of the Northern Territory, hitherto untapped but now so apparent, are to be properly utilized.

Closer cooperation with China and the Netherlands East Indies is essential if we are to have a real voice in affairs Pacific. This country has a glorious heritage, thanks to the sacrifice of so many of her sons. Let her rich resources be available to as many as may be suitably absorbed. The prosperity enjoyed by the efforts of a larger working community will automatically result in a higher birth rate.

It is felt that as the medical profession should play a part in the management of this process, it should support a policy directed against the "White Australia" bogy of Federation days.

Yours, etc.,

ERIC GOULSTON,
Major, Australian Army
Medical Corps.

January 6, 1944.

THE NERVOUS SOLDIER.

SIR: May I crave space for a postscript to my letter in your issue of November 27. I do not propose to make formal reply to Professor Bostock and Dr. Evan Jones, nor to "Repatriation Tribunal Referee". The latter, indeed, brings nothing new, and his letter so obviously reflects the abnormal conditions of the "Entitlement Appeal Tribunal", that I welcome it as supporting my thesis.

And I am in profound general agreement with the objective of Professor Bostock and Dr. Evan Jones. The foundation of psychology, as of philosophy, is summed up in the precept of the Greek philosopher Thales, "know thyself", and since the prime purpose of their book is to help the soldier to know himself, I gratefully acknowledge this exposition of their intention. But all the same, I do not think that their letter wholly resolves the issue which I raised, namely, the normal reaction of the normal "soldier in battle", to the moral and mental stresses and strains of war; and the appropriate attitude toward him of the regimental medical officer. It seems to me that the difference in our outlook is that which distinguishes British from, say, French law—namely, that a man is held innocent until he is shown to be guilty. In a force whose morale is high, the great majority of soldiers will retain the captaincy of their soul and their self-regard on a plane which ensures that their conduct will reflect closely what is expected of them. Of course, every officer and man has innate impulses, obvious and occult, which impel him to give way to the "overwhelming" motivation of desires and fears, immediate and remote—and, when all is said, not so very deeply "burried". Aren't we all! But I hold that the knowledge that his regimental medical officer—and even the pension referee—presumes that he will play a man's part, will materially influence a soldier's—even an ex-soldier's—behaviour. The vicious circle that is created by the reverse attitude is proverbial. In the field of post-war adjustment we find, indeed, this curious phenomenon that now-a-days the claimant to "entitlement" habitually presumes that he will be disbelieved—and commonly is not disappointed! However it may have originated, this situation is deeply disturbing. I realize, indeed, that it is the chief *raison d'être* for this book.

I have a right to expect that my appreciation of the outstanding importance of the work shall be taken at face value; and the chief purpose of this postscript is to propose an *audi alteram partem* to my own letter. While I cannot believe that the authors are right in their contention that "nervous invalidism" provides now the chief cause of military inefficiency, there can be no doubt but that there is a widespread and highly sophisticated endeavour to replace the "shell shock" of the last war by a clash of "complexes" and so to re-create the aura of mystery and fetish round the subject of "nervous breakdown". This, I believe, has in a great part been brought about by the influence of the "new psychology", as interpreted and exploited in Press, broadcast and so forth, so that, indeed (as I am authoritatively informed), the "pension" outlook in this respect is permeating the army itself. This was not so in the last war. And in so far as Professor Bostock and Dr. Evan Jones seek to bring to the light of day the hidden motives, social as well as individual, which are creating this evil thing, they deserve all the gratitude and support which we as a community can give to them.

Our difference seems, indeed, to be largely a matter of stress and expression. But I steadfastly adhere to my conviction that an attitude of mind on the part of the regimental medical officer, and even of the pensions referee, which shall keep in the forefront the idea that he is dealing with "potential exaggerators" (and does not exaggeration lead to neurosis as well as to malingering? I should welcome enlightenment) is wholly unfair to the soldier and is, indeed, not less dangerous than is undiscerning "sympathy" as an activator of suggestion to a treachery hitherto suppressed in the strongholds of Mansoul.

In the domain of physiology "positive health" is universally extolled above the mere absence of disease; surely this attitude is even more desirable in that of psychology.

Yours, etc.,

A. G. BUTLER.

Canberra.
January 15, 1944.

INTRACAPSULAR CATARACT EXTRACTION.

SIR: While agreeing with Dr. J. J. O'Grady that the above operation, with the new technique, should be encouraged and performed in all suitable cases, it is a pity that he should have marred a good argument by false analogy and extravagant statement. The analogy with a gangrenous appendix is a false one. A better would be perhaps the guillotining of tonsils as compared with their enucleation.

I am sure that he does not mean to be taken literally, but if so, he would imply that all that is needed to make a good oculist is that he should be a good operator.

I would suggest to him that even average operative dexterity coupled with a sound knowledge of pathology will be more valuable to the community than mere operative brilliance.

Yours, etc.,

E. TEMPLE SMITH.

Locarno,
141, Macquarie Street,
Sydney.
January 17, 1944.

THE PRACTICE OF RADIOTHERAPY AND THE FUTURE OF CANCER TREATMENT IN AUSTRALIA.

SIR: With reference to Dr. Frecker's letter in your issue of January 15, 1944, I would like to point out that:

The advisory committee has always considered that the efficiency of the proposed unit depended on the goodwill and wholehearted cooperation of the administrative and medical staffs of the hospitals. It was to obtain advice and constructive criticism that the committee were afforded the privilege of meeting representatives from Saint Vincent's Hospital, Royal Prince Alfred Hospital and Sydney Hospital, but we have not yet had time to meet representatives from other hospitals.

These meetings were very helpful to the committee and much useful information was gained, which will guide the committee in drawing up its report.

The efficiency of a cancer institute is to a large extent dependent on the staff, and in this instance it is clear that the practising radiotherapists will form the nucleus of the staff.

The committee have been concerned with the position of those radiologists who might not see their way clear to apply for an appointment on a whole-time basis.

Consideration of this matter and the staffing of the institute generally has been and is receiving the attention of the committee which is confident that the interest of all parties, the public, the hospitals and the medical profession will be adequately safeguarded when its report is finalized.

Since Dr. Frecker has raised certain issues in his letter of December 23 I have availed myself of the opportunity of personally interviewing him and indicating the present stage of the committee's deliberations as outlined above.

Yours, etc.,

R. I. FURBER,
For and on behalf of the Committee.

B.M.A. House,
135, Macquarie Street,
Sydney.
January 18, 1944.

Obituary.

LESLIE COWLISHAW.

We are indebted to Dr. Keith Macarthur Brown for the following appreciation of the late Dr. Leslie Cowlishaw.

We have every reason to be grateful for the life and work of Dr. Leslie Cowlishaw, whose death was recorded recently in this journal. To a number of his own generation he was known as a man of wide general culture and he was *facile princeps* among the small band of Australian medical practitioners who had made a study of the history of medicine.

He was the eldest son of Mahlon Clarke Cowlishaw, a prosperous shipping merchant of Sydney, and the greater part of his care-free youth was spent amid the pleasant surroundings of the family residence, still familiar to many as "Greenknowe", Pott's Point. As a pupil at the Sydney Grammar School he found favour in the eyes of that great headmaster, Albert Bythesea Weigall, who may not have been deeply impressed by his scholastic attainments, but may easily have succumbed to the attraction exerted by a laughing manner, a transparently honest mien, a superb physique and a natural ability on the cricket field.

Leslie Cowlishaw was a good bowler and an excellent batsman, but strange to say gave no indication to his school mates that he was fond of reading the classics and was even then haunting the bookshops for a type of literature far beyond the unsophisticated tastes of an ordinary schoolboy. He is chiefly remembered by his associates of the early days as the imperturbable captain of the Sydney Grammar School first eleven, whose delightful batting charmed the youthful onlookers on so many occasions; they remember his achievements in the intercolonial school matches and later as a first-grade player in the University cricket team. Throughout his lifetime he maintained an intense interest in the game and never missed a test match played within a reasonable distance of his home.

In 1887, when he was ten years of age, he had the good fortune to visit England with his father, and again after passing his matriculation examination for entrance to the university, with his family he made an extensive tour of Europe including the Scandinavian countries, and then went to Canada and the United States of America before returning to England. Soon after his return to Australia he commenced his medical course at the University of Sydney, where he read medical books ancient and modern, played a great deal of cricket and did some private research in a variety of fascinating subjects not mentioned in the curriculum. He graduated in 1906 and then set out once again with his family on another world tour. This time he knew what he wanted in the way of books and he knew where to go for them. There can be little doubt that his familiarity with the ancient sets of learning and culture in the old world, and his acquaintance with some of the more important centres of medical education in the new, were contributing factors in helping Cowlishaw to acquire a profound knowledge of the history and literature of his profession.

In 1908 he settled down quietly to practise in Cooma. His first step was to provide a home for the already formidable collection of books which had been steadily accumulating since his school days. Added to his many books on general literature were rare editions of the works of ancient medical writers garnered from all manner of sources on his travels abroad. Here, in Cooma, he first met his future wife, Miss Jessie Garnock, whose people owned a grazing property known as "The Rock", not far from the township, and their marriage in 1909 consummated a union which in no small measure contributed to that serenity of mind which enabled him to pursue his life's study in an atmosphere of enduring peace, harmony and contentment.

When Germany declared war in 1914, Leslie Cowlishaw was among the early medical men to volunteer for active service with the Australian Imperial Force. He served in Egypt and on Gallipoli as a medical officer with the Twelfth Light Horse Regiment, until he was evacuated suffering from scarlet fever and invalided to England. For a time he filled a minor administrative position in London connected with the invaliding of troops, and then went to France where he was promoted to the rank of major after joining the First Field Ambulance. In 1917 he came out to Australia in medical charge of the troops on the hospital ship *Ceramic*, in which he returned to England three months later to be transferred to Le Havre as senior medical officer of an Australian base camp. He came back to Australia in October, 1918, spent a short time as medical officer on the staff of the Randwick Military Hospital, and after his demobilization commenced practice at Hornsby. In July, 1919, he bought the practice of Dr. Halcombe at Lindfield, and there he remained to build up a good connection among people who soon learnt to appreciate his inherent kindness of heart, sincerity of purpose and devotion to the highest principles of professional conduct.

Above all, Leslie Cowlishaw will be remembered as our pioneer student of the history of medicine. Forty years ago, when he was already well versed in its lore, the subject of medical history was just beginning to take a new lease of life and was gradually being established on a firm basis as an exact science. It received its first real impetus when in 1901 Karl Sudhoff was appointed director of the Puschmann Institute in Leipzig, since when, institutes have been founded in many parts of the world, and the monumental work of Sudhoff has been continued by outstanding men like his pupils, Henry Sigerist, Charles Singer and Fielding Garrison, who published his "Introduction to the History of Medicine" in 1913.

In Australia Cowlishaw seemed to be the one man with a profound learning in the science, and he did what he could to encourage and foster an interest in the subject among his professional brethren. He was the moving spirit in the formation of a Section on Medical History and Literature as a special group of the New South Wales Branch of the British Medical Association in June, 1925, with Dr. R. Scot Skirving as President and Dr. Herbert Moran as Honorary Secretary. It was also due to his efforts that for the first time a Section of Medical History and Literature was recognized by the authorities responsible for the Australasian Medical Congress held in Sydney in 1929, and he was invited to act as honorary secretary. By this time more thought was being given to the subject by some of our own medical men, so that two excellent papers on Australian medical history were included in the programme.

Cowlishaw's ripe scholarship enabled him to castigate freely, but withal mercifully, the unwary author of an historical paper if he should carelessly expose himself to criticism by commiting himself to a statement which could not be entirely substantiated from an authoritative source. In one such instance he gave way to his feelings and exclaimed: "Is it not time, now that the study of medical history has been placed on a scientific basis and many sound works on the subject exist, that those who venture on

historical discourses should verify the statements made by fifth-rate historians before they send them forth once again as true?"

In December, 1931, a move was made in the right direction when the Senate of the University of Sydney allowed Cowlishaw to deliver a series of twelve lectures to the sixth year students. Although the attendance was not obligatory, most of the students found time to come and listen to the fascinating story of their great heritage and to see a unique selection of lantern slides, rare medical books and ancient manuscripts which the lecturer had transported from his home to illustrate his subject. As no financial provision had yet been made for a lectureship in the history of medicine, Cowlishaw undertook this self-imposed task for ten years without payment in the hope that the lectures might give the young graduate a true insight into the real background of his life's work, and perhaps lay the foundation of a broad general culture for the days to come.

Over a period of the last twenty-four years Leslie Cowlishaw covered a moderately large field in his own writings on various aspects of medical history. To the first issue of *The Journal of the College of Surgeons of Australasia* in July, 1928, he contributed one of the articles, "History and Origin of the Royal College of Surgeons in Ireland", and in the same journal (now *The Australian and New Zealand Journal of Surgery*) appeared "Two Great Surgeons: Guy de Chauliac and Ambroise Paré" in April, 1936, an address which he delivered in Melbourne on the occasion of the opening of the new home of the Royal Australasian College of Surgeons. In March, 1936, he was invited to deliver the George Adlington Syme Oration at the annual meeting of the College in Sydney, and for the first time he selected the Australian scene for his subject in "Fifty Years of Medicine in Australia". In November of the same year he was chosen to give the Charles Mackay Lecture at the Institute of Anatomy in Canberra, and the title of his paper was "The Life and Works of Sir Charles Bell". In August, 1937, he went to Brisbane to give the Sandford Jackson Lecture before the Queensland Branch of the British Medical Association, when his subject was "Galen, the Medical Dictator: His Life and Influence on the History of Medicine". In the same month he was President of the Section of Medical History and Literature at the Australasian Medical Congress (British Medical Association) held in Adelaide, and he opened the proceedings with a most informative discourse on "The Development of the Study of the History of Medicine".

Among other published articles may be mentioned "Precursors of Laennec in the Diagnosis of Diseases of the Heart and Lungs" (THE MEDICAL JOURNAL OF AUSTRALIA, 1926), "Some Early Printed Books: Their Authors and Printers" (THE MEDICAL JOURNAL OF AUSTRALIA, 1926), "Pasteur" (THE MEDICAL JOURNAL OF AUSTRALIA, 1927), "Harvey's England: 1578-1657" (THE MEDICAL JOURNAL OF AUSTRALIA, 1928). In the *Australasian Nurses' Journal* two articles appeared under his name in 1926, "The Medical Student: His Life, His Schools and His Studies during the Middle Ages, 1100 A.D.-1500 A.D." (April) and "Hospitals and Nurses in Past Ages" (September). He read a paper on "Vesalius the Anatomist" at a recent meeting of the Royal Australasian College of Surgeons, and it appeared in THE MEDICAL JOURNAL OF AUSTRALIA only a few days after his death.

Some of his work still remains unpublished: "Medical Men and Medical Books at the Period of the Renascence: 1459-1600" and "Some Famous Medical and Surgical Books and their Authors", read before the University of Sydney Medical Society; "Medical Men in Caricature" and "A Dutch Painter of Medical Scenes: Jan Steen", read before the Section of Medical History and Literature of the New South Wales Branch.

In the course of one of his lectures Cowlishaw remarked: "In the hurly-burly of everyday medical practice we are apt to forget the debt we owe to the past, and in many cases I am afraid the average medical practitioner is woefully ignorant of the great ones of the profession whose labours have illuminated so many dark places." It would be helpful to us if these scholarly monographs of our pioneer medical historian could be collected in one volume to be prefaced by the story of his own life and work.

Ever since the beginning of the century Cowlishaw had been accumulating a truly remarkable collection of incunabula, rare editions of the works of the great path-finders of medicine, and early printed books, until he possessed a library of some three thousand volumes, all carefully indexed and tabulated. There are famous books by Sydenham, William Harvey, the Hunters, Gerarde, Culpeper, Galen, Celsus, Paré and Vesalius, a sixteenth century edition of Hippocrates, Pliny's "Historie", Argellata's "Cirugia" (1499), Guy de Chauliac's "Cirugia" (1499) and Bartholomeus's "Anglicus" (1483). There are also many fine prints, portraits and manuscripts.

Eight years ago Cowlishaw deplored the sad want of good medical reference libraries in Australia, and addressed the Royal Australasian College of Surgeons in these words: "The medical profession has made great progress during the last 150 years in Australia, but I venture to say that there is one aspect in our medical life of which we have no reason to be proud. I am thinking of our medical libraries. Australia lags far behind the other countries in this respect, and many small towns in Canada and the United States of America would look with pitying eyes at our collection of medical books. We have yet to find a Mitchell or a Dixon to endow our medical libraries." Let us hope and pray that his plea will not continue to go unheeded.

Leslie Cowlishaw had other interests besides his absorbing passion for the *literæ humaniores*. For many years he was a member of the honorary medical staff of the Hornsby District Hospital; he was a Fellow of the Royal Society of Medicine (London), and in 1939 passed the examination for Membership of the Royal Australasian College of Physicians. As an active member of the Returned Soldiers, Sailors and Airmen's Imperial League of Australia he looked upon it as a duty and a privilege to do what he could for the children of deceased comrades of the last war, so that he joined the medical committee of the Legacy Club of Sydney and gave his services unstintingly in the conduct of routine medical examinations and by taking a practical interest in the general welfare of the children.

In 1939, before war was declared, Cowlishaw associated himself with the National Emergency Services in the Chief Warden's Area of Kuring-gai, and since he was appointed Area Medical Commandant three years ago took a large share in helping to make that area one of the most efficient in the State.

Until a few years ago Fate had always been consistently kind to Cowlishaw, but then dark tragedy suddenly entered his life. His only son, David, was killed in a motor-car accident on the south coast. This fine promising lad of twenty had a great deal in common with his father and shared his love for good literature. However, the deep sorrow which clouded the remainder of his life was soon veiled behind a courtly manner and a friendly smile.

A short time ago he quoted from one of his ancient mentors in a paper on medical history:

> Whatever your career may be, do not let yourself become tainted by a deprecating and barren scepticism. Do not let yourself be discouraged by the sadness of certain hours which pass over nations. Live in the serene peace of laboratories and libraries. Say to yourself first: "What have I done for my instruction?" And as you gradually advance say: "What have I done for my country?" But whether our efforts are or are not favoured by life, let us be able to say when we come near the great goal: "I have done what I could."

What Leslie Cowlishaw actually did in his quiet, unobtrusive way will most assuredly become known and appreciated by medical students and doctors in the days that are to come.

Naval, Military and Air Force.

DECORATIONS.

Brigadier Frank Kingsley Norris, D.S.O., A.A.M.C., has been appointed a Commander of the Military Division of the Most Excellent Order of the British Empire and has been awarded the British Empire Medal.

Colonel John Gerald Hayden has been appointed a Commander of the Military Division of the Most Excellent Order of the British Empire.

Lieutenant-Colonel Arthur Francis Hobson, A.A.M.C., and Major (Temporary Lieutenant-Colonel) Edward Charles Palmer, A.A.M.C., have been appointed officers of the Military Division of the Most Excellent Order of the British Empire and have been awarded the British Empire Medal.

Captain John Arthur McKelvey Shera, A.A.M.C., has been appointed a Member of the Military Division of the Most Excellent Order of the British Empire and has been awarded the British Empire Medal.

Captain James David Fotheringham, A.A.M.C., Captain Alan Edward McGuiness, A.A.M.C., and Captain Victor Edward Sampson, A.A.M.C., have been awarded the Military Cross.

His Majesty the King has approved that the following members of the Australian Army Medical Corps of the Australian Imperial Force be Mentioned in Dispatches in recognition of gallant and distinguished services in the South-West Pacific Area: Major Ian Firth Vickery (posthumous), Colonel (Temporary Brigadier) William Wallace Stewart Johnston, C.B.E., D.S.O., M.C., E.D.; Lieutenant-Colonel (Temporary Colonel) Arthur Hamill Green; Lieutenant-Colonel (Temporary Colonel) George Brumfitt Gibb Maitland, D.S.O., D.C.M.; Lieutenant-Colonel Donald Alastair Cameron; Lieutenant-Colonel Malcolm Sydney Stewart Earlam; Lieutenant-Colonel Edward Ford; Major (Temporary Lieutenant-Colonel) John Murray Blair; Major (Temporary Lieutenant-Colonel) Roderick Hector MacDonald; Major (Temporary Lieutenant-Colonel) Keith Chisholm Ross; Major (Temporary Lieutenant-Colonel) Truman George Swinburne; Major (Temporary Lieutenant-Colonel) Stanley William Williams; Major Ronald James Humphery; Major William Dudley Refshauge; Captain (Temporary Major) Thomas Harry Ackland; Captain (Temporary Major) Munro Scott Alexander; Captain (Temporary Major) Richard Roderick Andrew; Captain (Temporary Major) Joseph Ruskin Cornish; Captain (Temporary Major) Donald Grant Duffy; Captain (Temporary Major) George Taylor Gibson; Captain (Temporary Major) Alan Vaughan Jackson; Captain (Temporary Major) John Gavin Johnson; Captain (Temporary Major) William Ernest King; Captain (Temporary Major) John Ochiltree Lavarack; Captain (Temporary Major) Douglas Robert Leslie; Captain (Temporary Major) Hew Fancourt Graham McDonald (deceased); Captain (Temporary Major) Stanley Augustine McDonnell; Captain (Temporary Major) Donald Charles Cameron Sword; Captain (Temporary Major) Joseph Herbert Thorp; Captain (Temporary Major) James McRae Yeates; Captain (Honorary Major) William Henry Smith; Captain Alexander Hugh McGregor; Captain Douglas William MacPherson; Captain Keith Viner Smith; Captain Geoffrey Hampden Vernon, M.C.

Nominations and Elections.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Craven, Richard Allan, M.B., B.S., 1943 (Univ. Sydney), Saint Vincent's Hospital, Darlinghurst.

Rothfield, Raymond David, M.B., B.S., 1943 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

The undermentioned has applied for election as a member of the Victorian Branch of the British Medical Association:

Pagliaro, Silvio, M.D., 1924 (Rome), 365, St. Kilda Street, Brighton, S.5.

Medical Appointments.

His Excellency the Governor in Council has been pleased to appoint the undermentioned medical practitioners to be honorary clinical assistants at the Royal Adelaide Hospital: *Medical Section:* Reginald Nevill Cudmore Bickford, Josiah Mark Bonnin, Karl Francis Edwards, Alan Henry Finger, Oswald Bertram Lower, Ivan Sandilands Magarey, Malcolm William Miller, Donald Keith McKenzie, John Meavious Pedler, Geoffrey Ernest Peters, Christopher Bagot Sangster, Ronald Keith Stockbridge, Frederick Gordon Trevor Turner, Robert Frank West. *Surgical Section:* Noel James Bonnin, Joseph Ruskin Cornish, Oscar Westcott Frewin, Andrew John Hakendorf, Garton Maxwell Hone, Wallace Wilson Jolly, Thomas Davis Kelly, Sydney Krantz, Bruce Ernest Lawrence, James Davidson Mill, Owen Meredith Moulden, Neill Horace Munday, Alistair Campbell McEachern, Douglas Gordon McKay, Leonard James Ternouth Pellew, Henry Gordon Prest, John Love Steele Scott, George Herbert Solomon, Alan Hubert White. *Orthopædic Section:* Norman Stannus Gunning, Esmond Frank West. *Neurosurgical Clinic:* Thomas Davis Kelly. *Gynæcological Section:* John Joseph Carter, Gerald Jenkin Gregerson. *Vaccine and Asthma Clinic:* John Edwin Bateman. *Physiology Department:* James David Fotheringham, David Wickham Shepherd. *Dermatological Section:* William Gilfillan, Leslie Wadmore Linn. *Radium Section:* William Gilfillan, Bertram Speakman Hanson. *X-Ray Section:* Bertram Speakman Hanson, Bronte Creagh Smeaton. *Ophthalmological Section:* Thomas Leslie McLarty, Samuel Pearlman.

Books Received.

"Holt's Care and Feeding of Children", revised and enlarged by L. Emmett Holt, junior, M.D.; 1943. New York: D. Appleton-Century Company Incorporated. 7¼" × 5", pp. 333. Price: Illustrated, $2.00.

Diary for the Month.

FEB. 8.—New South Wales Branch, B.M.A.: Executive and Finance Committee.
FEB. 11.—Queensland Branch, B.M.A.: Council Meeting.
FEB. 11.—Victorian Branch, B.M.A.: Ethics Subcommittee.
FEB. 14.—Victorian Branch, B.M.A.: Hospital Subcommittee.
FEB. 14.—Victorian Branch, B.M.A.: Finance Subcommittee.
FEB. 15.—New South Wales Branch, B.M.A.: Medical Politics Committee.
FEB. 15.—Victorian Branch, B.M.A.: Organization Committee.
FEB. 17.—Victorian Branch, B.M.A.: Executive Meeting.
FEB. 22.—New South Wales Branch, B.M.A.: Ethics Committee.
FEB. 23.—Victorian Branch, B.M.A.: Council Meeting.
FEB. 25.—Queensland Branch, B.M.A.: Council Meeting.
FEB. 26.—Tasmanian Branch, B.M.A.: Annual Meeting.

Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment mentioned below without having first communicated with the Honorary Secretary of the Branch concerned, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

New South Wales Branch (Honorary Secretary, 135, Macquarie Street, Sydney): Australian Natives' Association; Ashfield and District United Friendly Societies' Dispensary; Balmain United Friendly Societies' Dispensary; Leichhardt and Petersham United Friendly Societies' Dispensary; Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney; North Sydney Friendly Societies' Dispensary Limited; People's Prudential Assurance Company Limited; Phœnix Mutual Provident Society.

Victorian Branch (Honorary Secretary, Medical Society Hall, East Melbourne): Associated Medical Services Limited; all Institutes or Medical Dispensaries; Australian Prudential Association, Proprietary, Limited; Federated Mutual Medical Benefit Society; Mutual National Provident Club; National Provident Association; Hospital or other appointments outside Victoria.

Queensland Branch (Honorary Secretary, B.M.A. House, 225, Wickham Terrace, Brisbane, B.17): Brisbane Associated Friendly Societies' Medical Institute; Bundaberg Medical Institute. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY HOSPITAL or position outside Australia are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.

South Australian Branch (Honorary Secretary, 178, North Terrace, Adelaide): All Lodge appointments in South Australia; all Contract Practice appointments in South Australia.

Western Australian Branch (Honorary Secretary, 205, Saint George's Terrace, Perth): Wiluna Hospital; all Contract Practice appointments in Western Australia.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be Stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such a notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and booksellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad *per annum* payable in advance.